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## Curriculum Vitae

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# 1 Personal Information, Degrees, Position, Honours

- Turkish Citizen by birth, French Citizen by naturalisation.
- Degrees:
  - BSc.Eng. (High Honours), Middle East Technical University, Ankara, 1966.
  - MSc and PhD (1969) thesis on “Stochastic automata with structural restrictions”, Polytechnic University (Brooklyn Poly), New York.
  - Doctorat d’État ès Sciences Mathématiques thesis on “Modélisation de systèmes informatiques”, Université Pierre et Marie Curie (Paris VI), 1973.
  - Competitive Studentships & Fellowships: Gordon McKay Fellow (Harvard), 1974, NATO Science Fellow, September 1967-August 1969, Fulbright Fellow, September 1966-August 1967
- Languages (fluent): English, Turkish, French, Italian.
- Professor in the Dennis Gabor Chair at Imperial College, London (since 1st March 2003). Head of the Intelligent Systems and Networks Section which includes a Professor, two Emeritus Professors, a Visiting Professor, two Readers, two Senior Lecturers, one Lecturer, four Research Fellows, fifteen Research Assistants and some thirty PhD students.
- Recent Industry Consultancies: General Dynamics UK Ltd (October 2003–March 2009), Microsoft Research (January 2009 – March 2009), Oxford University Press (December 2007– present), BAE Systems Ltd (October 2009-January 2010).
- **Bibliometrics**
  - **Harzing’s Publish Perish Index on December 21, 2009**
    - \* Times Cited: **6646**; Average Citations per Item: **8.86**
    - \* h-index: **42**; g-index: **68**; hc-index: **22**
  - **Harzing’s Publish Perish Index Limited to Last 25 Years (1984-2009) on December 21, 2009**
    - \* Times Cited: **4608**; Average Citations per Item: **11.08**
    - \* h-index: **36**; g-index: **58**
  - **Science Citation Index (Web of Knowledge) on December 21, 2009**
    - \* Times Cited: **1,846**; Average Citations per Item: **8.06**
    - \* h-index: **25**
- **Membership of Academies and Professional Society Fellowships**
  - Member of Academia Europaea <http://www.acadeuro.org>
  - Member of French National Academy of Engineering (Académie des Technologies) <http://www.academie-technologies.fr>
  - Member of Turkish Academy of Sciences <http://www.tuba.gov.tr>
  - Fellow IEEE (1986) “For leadership in the development of computer system performance evaluation.”
  - Fellow of ACM (2001) “In recognition of outstanding technical and professional achievements in information technology.”
  - Fellow IEE (London) (2003)
  - Chartered Engineer (UK), CEng (1985)
  - Other professional society awards and recognitions: Silver Core Award (1980) of the International Federation of Information Processing Societies, IEEE Meritorious Service Award (1989), IEEE Computer Society Meritorious Service Award (1992), Sigma Xi, Eta Kappa Nu (Electrical Engineering Honor Society), Upsilon Pi Epsilon (Computer Science Honor Society).
- **Honorary Doctorates (Honoris Causa)**
  - “*Doctorat en Sciences Honoris Causa*”, University of Liège, Belgium, 2006.
  - *Honorary PhD*, Bogaziçi University, Istanbul, Turkey, 2004.
  - *Dott. Ingegnere Honoris Causa in Ars Computandi*, University of Rome II, Italy, 1996.
- **Scientific Prizes**
  - *ACM SIGMETRICS Achievement Award* (2008), one of ACM’s (Association for Computing Machinery) field awards. I was the first non-US citizen to receive this prize.

- *Prix France-Telecom* (1996), one of the 10 “grand prix” of the French Academy of Science, awarded every two years. I was the first Computer Scientist to receive the award.
- *Science Award of the Parlar Foundation* (1994), Ankara, Turkey.

- **Decorations**

- Italian Honours of *Grande Ufficiale dell’Ordine della Stella della Solidarietà* (2007) and *Commendatore al Merito della Repubblica* (2005)
- French honours of *Chevalier* (1992) and *Officier* (2001) de l’*Ordre National du Mérite*
- French honour of *Chevalier de l’Ordre des Palmes Académiques* (2003).

- **Recent Boards and Journal Editorships**

- Member of the Science & Technology Board of *The Defence Technology Centre on Data and Information Fusion, MoD, UK*, October 2003-June 2009.
- Member of the Executive Board of *The Defence Technology Centre on Data and Information Fusion, MoD, UK*, October 2003-June 2009
- Member of the Executive Committee of the *UK Computer Research Council UKCRC*, June 2008-present.
- Member of the Election Committee of the *UK Computer Research Council UKCRC*, June 2007-June 2008.
- Member of the Scientific Advisory Committee of the *Cyprus Foundation & Cyprus Institute* December 2007-present.
- Editor-in-Chief *The Computer Journal* (British Computer Society), since December 2007.
- Editorial Board Member: *The Computer Journal* 2005-2007, *Proc. Royal Society A* 2005- present, *Acta Informatica* since 1980, *Performance Evaluation* 1978- present, *Performance Evaluation* 1979- present, *Annals of Telecommunications*, 1998- present, *IEEE Trans. on Software Engineering* 1980-92, *Proceedings of the IEEE* 1994-98.
- Series Editor for *Advances in Computer Science and Engineering*, Imperial College Press, since 2006.
- Chair of the Technical Advisory Board of the *US Army Simulation and Training Command* 2000-2003.

- **Previous Positions**

- University Chair Professor, Director of the School of EECS and Associate Dean of Engineering at the University of Central Florida (August 1998 to August 2003).
- Nello L. Teer Professor (endowed chair) of Engineering, of Computer Science, and of Experimental Psychology, and Chair of ECE Dept., Duke University, (May 1993 - August 1998).
- New Jersey State Endowed Chair of Computer Science, NJIT, Fall 1991 to April 1993.
- Associate Professor then Professor of Computer Science (Professeur de 1ère classe), University of Paris Orsay (France) 1979, moved to Université Paris V (René Descartes) 1986, promoted to Professeur de classe exceptionnelle 1991, and to 2è échelon (highest academic rank in France) in 2002. On leave of absence from the University of Paris (1991-2005).
- Science and Technology Adviser to the French Cabinet Minister for Universities (1984-86), on secondment from Univ. of Paris Orsay.
- Maître de conférences à mi-temps (Half-Time Lecturer) in Applied Mathematics, Ecole Polytechnique, 1979-87.
- Professor of Computer Science, University of Liège (1974-79).
- Research Engineer (1972-73), then Research Group Leader (part-time) at INRIA (1973-82).
- Maître de conférences associé (Visiting Lecturer), Université Paris Nord (1973-74).
- Assistant Professor of Computer, Information and Control Engineering, University of Michigan, Ann Arbor (1970-74), on leave during 1972-74.

## 2 Research Areas and Teaching Activities

### 2.1 Teaching

I enjoy classroom teaching. Over the years, the courses I have taught include one semester undergraduate and graduate courses on:

- Computer Systems Area: Computer Architectures, Operating Systems, System Performance Evaluation, Database Systems

- Digital Systems Area: Switching Circuits, Logical Design.
- Data Communications Area: Computer Networks, Random Processes in Communications
- Discrete Mathematics: Fundamental Algorithms, Graph Theory, Automata Theory
- Operations Research: Queueing Theory, Statistics
- Machine Learning and Neural Networks.

## 2.2 Areas of research and publication

- Computer Networks, Autonomic Communications
- Internet Economics, including Auctions in the Internet
- Decision tools for tactical decision making including emergency management
- Bioinformatics, including biological neuronal models and gene regulatory networks
- Artificial neural networks and their applications
- Computer memory management, virtual memory and computer time-sharing systems (1973–1980)
- Performance modelling methods for computer systems, including the development and commercialisation of software tools such as QNAP2 & Modline (1974–1995)
- Formal languages and automata theory (1967–1971)

Throughout the years, in all of these areas I have collaborated with numerous companies including CII-Bull, France Telecom, SAGEM and Simulog (in France), IBM, Sandoz, Schwartz Electro-optics and AT&T (in the US), and BT, GD UK Ltd, Microsoft Research, QinetiQ, BAE Systems and Selex (in the UK), with several developments and patents licensed to industry.

## 2.3 PhDs Graduated

I have graduated over 50 PhD students in France, the USA and the UK, including more than ten women PhDs who are academics and industrial researchers in the US, Canada, France and the UK.

## 2.4 Books and Monographs

- P. Bouchet, M. Damestoy, E. Gelenbe, Ch. Parent, “Procédures de reprise dans les bases de données centralisées”, *Monographie AFCET*, Editions Hommes et Techniques, Paris, 1978.
- E. Gelenbe, R. Marie, M. Métivier, J. Labetoulle, G. Pujolle, W. Stewart “Méthodes de modélisation de systèmes informatiques”, *Monographie AFCET* Editions Hommes et Techniques, Paris, 1980.
- E. Gelenbe, I. Mitrani “Analysis and synthesis of computer systems”, Academic Press (London and New York), 1980.  
Japanese translation: Ohm-Sha Publishing Co., Tokyo 1988.  
Expanded 2nd Edition: World Scientific, Singapore 2009.
- Two chapters in “La Téléinformatique”, Edited by C. Macchi and J.F. Guilbert, Dunod (Paris), 1979.
- E. Gelenbe, G. Pujolle “Introduction aux réseaux de files d’attente” Collection Scientifique et technique du CNET and Editions Eyrolles (Paris), 1982.
- W. Cellary, E. Gelenbe, J. Morzy “Concurrency control in distributed databases”, North-Holland Pub. Co., Amsterdam, 1988.
- E. Gelenbe, “Multiprocessor performance”, John Wiley & Sons, Chichester and New York, 1989.
- E. Gelenbe, G. Pujolle “Introduction to queueing networks”, J. Wiley & Sons, Chichester and New York, 1986.
- E. Gelenbe, G. Pujolle “Introduction to queueing networks”, J. Wiley & Sons, Chichester and New York.  
Expanded and Revised 2nd Edition 1998, 2nd Edition 2nd Printing 1999. Korean translation: Cheong Moon Gak Publishers, Seoul 2000.

## 3 Research Activities and Grants at Imperial College 2003–2009

### 3.1 Grants at Imperial (2003-2009)

**As Principal Investigator**, in this six year period, I have received research grants **as PI in excess of US\$ 6.4 Million** at the current (2009) rate of exchange, including more than £3.6 Million from UK sources with more than £1.6 Million from EPSRC (similar to NSF), plus more than Euros 880,000 from the EU FP6 and FP7 programmes. Specific awards include:

- UK Technology Strategy Board “SATURN: Self-organising Adaptive Technology underlying Resilient Networks”, (PI E. Gelenbe), £619,440: 1/11/2009-30/10/2012.
- EU FP7 “Fit4Green: Power Aware Cloud Computing”, (PI E. Gelenbe), *Euros* 350,000; 1/1/2010-6/30/2012.
- EU FP7 “DIESIS: Simulation of Distributed Infrastructures” (PI E. Gelenbe) *Euros* 200,000; 1/2/08-30/3/10.
- “Decentralised Data and Information Processing” (PI E. Gelenbe), EPSRC, funded at £1,095,031 (5 years starting 1/1/06) that develops probability models of systems of software agents.
- EPSRC CASE 06001308 “Quality of Information in Sensor Networks” (PI E. Gelenbe), £60,864 for 36 months starting 18/9/06.
- “Quality of Information in Sensor Networks” (PI E. Gelenbe). US-UK International Technology Alliance, in collaboration with IBM at £280,000 for 30 months starting 18/9/06.
- “HYPERION” (PI E. Gelenbe) funded by British Telecom with MoD within the DIF DTC Phase II at £453,000 for 36 months starting 1/4/06. It investigates the “Adaptive Network” techniques to provide stable and secure network infrastructures.
- “C2 Agents” (PI E. Gelenbe) funded by QinetiQ with MoD at £290,000 for 30 months starting on 1/10/06.
- “CASCADAS – Autonomic Communication Systems”, (PI: E. Gelenbe) European Union FP6, funded at Euros 450,000 (3 years starting 1/1/06).
- “Dynamic Infrastructure Protection – SATURN”, (PI: E. Gelenbe). BT and MoD funded £80,000 project (12 months, 1/5/2005 to 30/4/2006) that investigated techniques to help networks mitigate denial of service attacks.
- “Self-Aware Networks and Quality of Service” (PI: E. Gelenbe) from EPSRC funded at £524,000 (3 years, 1/1/2004 to 31/12/2006) which investigated the use of measurement based adaptation in order to offer network users a better level of Quality-of-Service.
- EU FP6 Project SAPAD, *Euros* 80,000 for two years (January 2005–December 2007).
- “Future Data Fusion Systems: Design and Demonstration” (PI E. Gelenbe) was funded by MoD within the DIF DTC at the level of £468,000 for 3 years starting 1/10/03. It investigated the use of intentionality in order to drive military decision making and order to better follow targets. This work was conducted with two UK companies: QinetiQ and General Dynamics UK.
- “Adaptive Networks” funded by MoD Award at the level of £55,000 for 3 years starting 1/10/03. This work was conducted with the UK company BT Exact.
- While at Imperial and until January 2005, I benefited from a \$ 75,000 per year grant from the U.S. Army Research Office’s Mathematics Division to study theoretical aspects of network quality of service.

### 3.2 Publications (2003–2009)

#### 3.2.1 Recent Best Paper Awards

- A. Filippoupolitis, G. Loukas, S. Timotheou, N. Dimakis, and E. Gelenbe. Emergency response systems for disaster management in buildings. In Proceedings of the NATO Symposium on C3I for Crisis, Emergency and Consequence Management, Bucharest, Romania, May 2009. NATO Research & Technology Organisation.
- G. Sakellari and E. Gelenbe. A Multiple Criteria, Measurement-Based Admission Control Mechanism for Self-Aware Networks. Proceedings of the third International Conference on Communications and Networking China (CHINACOM’08), pp. 1060-1064, Hangzhou, China, 25-27 August 2008. IEEE, New York, NY, USA.

#### 3.2.2 Internet Economics & Auctions

- E. Gelenbe “ Analysis of single and networked auctions, *ACM Trans. On Internet Technology*, 9(2), May 2009.
- E. Gelenbe and L. Gyorfı “Performance of auctions and sealed bids”, *Proceedings of the 6th European Performance Engineering Workshop (EPEW 2009)*, Lecture Notes in Computer Science 5652, pp. 30-43, Imperial College London, 9-10 July 2009. Springer Verlag, Berlin and Heidelberg.

- E. Gelenbe and K. Velan “An Approximate Model for Bidders in Sequential Automated Auctions”, *Agent and Multiagent Systems: Technologies and Applications*, Lecture Notes in Computer Science 5559, May 2009. Springer-Verlag, Berlin Heidelberg.
- E. Gelenbe “Analysis of Automated Auctions”, *Proceedings of ISCIS 2006*, Lecture Notes in Computer Science 4263, pp. 1-12, 2006. Springer-Verlag, Berlin Heidelberg.

### 3.2.3 Journal Papers: Computer Networks, Wireless Sensor Networks, and Performance Models

- E. Gelenbe, Peixiang Liu, Boleslaw K. Szymanski, Mark Lisee, Christopher Morell “Cognitive and self-selective routing for sensor networks”, accepted for publication in *Computational Management Science*, manuscript number Ms. No. CMSC-D-09-00026, 2009.
- E. Gelenbe “Steps toward self-aware networks”, *Communications ACM*, 52(7):66-75, July 2009.
- E. Gelenbe, G. Sakellari, and M. D’Arienzo. Admission of QoS Aware Users a Smart Network. *ACM Transactions on Autonomous and Adaptive Systems*, 3(1):4:1-4:28, March 2008.
- Qi Zhua, Erol Gelenbe, Ying Qiaoc “Adaptive prefetching algorithm in disk controllers”, *Performance Evaluation* 65 (2008): 382395.
- E. Gelenbe. A diffusion model for packet travel time a random multi-hop medium. *ACM Transactions on Sensor Networks*, 3(2):1-19, June 2007.
- Erol Gelenbe and George Loukas. A self-aware approach to denial of service defence. *Computer Networks*, 51(5):1299-1314, April 2007.
- Simon Dobson, Spyros Denazis, Antonio Fernandez, Dominique Gati, Erol Gelenbe, Fabio Massacci, Paddy Nixon, Fabrice Saffre, Nikita Schmidt, and Franco Zambonelli. A survey of autonomic communications. *ACM Trans. Auton. Adapt. Syst.*, 1(2):223-259, 2006.
- E. Gelenbe, P. Liu, and J. Laine. Genetic Algorithms for Route Discovery. *IEEE Transactions on Systems, Man and Cybernetics B*, 36(6):1247-1254, December 2006.
- E. Gelenbe “Users and services in intelligent networks”, *Proceedings IEE (ITS)*, 153 (3), pp. 213-220, November 2006.
- J.-M. Fourneau, E. Gelenbe “Flow equivalence and stochastic equivalence in G-Networks”, *Computational Management Science*, 1 (2), pp. 179-192, 2004.
- E. Gelenbe, R. Lent, A. Nunez “Self-aware networks and quality of service”, *Proceedings of the IEEE*, 92 (9), pp. 1479–1490, 2004.
- E. Gelenbe, R. Lent “Power-aware ad hoc cognitive packet networks”, *Ad Hoc Networks*, Vol. 2, pp. 205-216, 2004.
- E. Gelenbe “Sensible decisions based on QoS”, *Computational Management Science*, 1 (1), 1–14, 2003.

### 3.2.4 Conference Papers: Computer Networks and Wireless Sensor Networks

- Edith C.-H. Ngai, Gregory Humber, Erol Gelenbe “Information-Aware Traffic Reduction for Wireless Sensor Networks”, Proc. LCN 2009, 34th IEEE Conference on Local Computer Networks, Zurich, Switzerland, 20-23 October, 2009.
- O. H. Abdelrahman and E. Gelenbe. Approximate analysis of a round robin scheduling scheme for network coding. 6th European Performance Engineering Workshop (EPEW ’09), London, UK, 9-10 July 2009. Springer LNCS.
- L. Hey and E. Gelenbe. Adaptive Packet Prioritisation for Wireless Sensor Networks. 5th Euro-NGI Conference on Next Generation Internet Networks (NGI ’09), Aveiro, Portugal, 1-3 July 2009.
- O. H. Abdelrahman and E. Gelenbe. Queuing performance under network coding. IEEE Information Theory Workshop (ITW ’09), Volos, Greece, 10-12 June 2009. IEEE, New York, NY, USA.
- G. Sakellari and E. Gelenbe. Adaptive Resilience of the Cognitive Packet Network the presence of Network Worms. Proceedings of the NATO Symposium on C3I for Crisis, Emergency and Consequence Management, pages 16:1-16:14, Bucharest, Romania, 11-12 May 2009. NATO Research & Technology Organisation.
- E. Gelenbe and E. Ngai. Adaptive QoS routing for significant events wireless sensor networks. Proceedings of the 5th IEEE International Conference on Mobile Ad-Hoc and Sensor Systems (MASS’08), pages 410-415, Atlanta, GA, USA, 29 September - 2 October 2008. IEEE, New York, NY, USA.
- E. Gelenbe and E. Ngai. Adaptive random re-routing for differentiated QoS sensor networks. Proceedings of the Visions of Computer Science Conference, pages 343-354, London, UK, 22-24 September 2008. The British Computing Society, Swindon, UK.
- E. Gelenbe and E. Ngai. Adaptive random re-routing in sensor networks. Proceedings of the Annual Conference of ITA (ACITA ’08), pages 348-349, London, UK, 9 September 2008.

- E. Gelenbe and L. Hey. Quality of information: an empirical approach. Proceedings of the 5th IEEE International Conference on Mobile Ad-Hoc and Sensor Systems (MASS'08), pages 730-735, Atlanta, GA, USA, 29 September - 2 October 2008. IEEE, New York, NY, USA.
- E. Gelenbe and L. Hey. Experimental insights into quality of information. Proceedings of the Annual Conference of ITA (ACITA '08), pages 298-299, London, UK, 9 September 2008.
- G. Sakellari and E. Gelenbe. A Multiple Criteria, Measurement-Based Admission Control Mechanism for Self-Aware Networks. Proceedings of the third International Conference on Communications and Networking China (CHINACOM'08), Best Paper Award, pages 1060-1064, Hangzhou, China, 25-27 August 2008. IEEE, New York, NY, USA.
- G. Sakellari, L. Hey, and E. Gelenbe. Adaptability and Failure Resilience of the Cognitive Packet Network. Presented at the Demo Session of the INFOCOM2008, 15-17 April 2008.
- G. Sakellari, E. Gelenbe, and M. D'Arienzo. Admission of Packet Flows a Self-Aware Network. Proceedings of the 4th IEEE International Conference on Mobile Ad-Hoc and Sensor Systems (MASS'07), pages 1-6, Pisa, Italy, 8-11 October 2007. IEEE Computer Society, Washington, DC, USA.
- E. Gelenbe and M. Gellman. Oscillations a bio-inspired routing algorithm. Proceeding of the 4th IEEE International Conference on Mobile Adhoc and Sensor Systems (MASS '07), pages 1-7, Pisa, Italy, 8-11 October 2007. IEEE Computer Society, Washington, DC, USA.
- G. Oke, G. Loukas, and E. Gelenbe. Detecting denial of service attacks with bayesian classifiers and the random neural network. Proceedings of Fuzz-IEEE 2007, pages 1964-1969, London, UK, July 2007. IEEE, New York, NY, USA.
- E. Gelenbe, A. Filippoupolitis, and I. Eid. Energy and time trade-offs duplicate packet transmission. Proceedings of International Symposium of Computer and Telecommunication Systems (SPECTS '07), San Diego, CA, USA, 16-18 July 2007.
- E. Gelenbe, G. Sakellari, and M. D' Arienzo. Controlling Access to Preserve QoS a Self-Aware Network. Proceedings of the First IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO), pages 205-213, Boston, MA, USA, 9-11 July 2007. IEEE Computer Society, Washington, DC, USA.
- P. Liu and E. Gelenbe. Recursive routing the cognitive packet network. Proceedings of 3rd International Conference on Testbeds and Research Infrastructures for the Development of Networks and Communities (TridentCom'07), pages 1-6, 21-23 May 2007.
- G. Sakellari, M. D' Arienzo, and E. Gelenbe. Admission Control Self Aware Networks. Proceedings of the 49th annual IEEE Global Telecommunications Conference (GLOBECOM 2006), pages 1-5, San Francisco, CA, USA, 27 November - 1 December 2006. IEEE, New York, NY, USA.
- E. Gelenbe, P. Liu, and J. Lainé. Genetic algorithms for autonomic route discovery. Distributed Intelligent Systems: Collective Intelligence and Its Applications, 2006. DIS 2006. IEEE Workshop on, pages 371-376. IEEE, New York, NY, USA, June 2006.
- E. Gelenbe. Travel delay a large wireless ad hoc network. 2nd Workshop on Spatial Stochastic Modeling of Wireless Networks, Boston, April 2006.
- E. Gelenbe. Users and services intelligent networks. Lecture Notes Computer Science, volume 3837, pages 30-45, December 2005. Invited paper. Cho, Kenjiro; Jacquet, Philippe (Eds.).
- E. Gelenbe and P. Liu. QoS and routing the cognitive packet network. Proceedings of the IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks, pages 517-521, June 2005.
- E. Gelenbe, M. Gellman, and G. Loukas. An autonomic approach to denial of service defence. Proceedings of the International Symposium on a World of Wireless Mobile and Multimedia Networks (WoWMoM '05, pages 537-541. IEEE, New York, NY, USA, June 2005.
- E. Gelenbe, M. Gellman, and G. Loukas. Defending networks against denial of service attacks. E.M. Carapezza, editor, Proceedings of the Conference on Optics/Photonics Security and Defence (SPIE), Unmanned/Unattended Sensors and Sensor Networks, volume 5611, pages 233-243, London, UK, October 2004.
- E. Gelenbe, M. Gellman, R. Lent, P. Liu, and Pu Su. Autonomous smart routing for network QoS. Proceedings of the First International Conference on Autonomic Computing, pages 232-239, New York, NY, May 2004.
- E. Gelenbe, R. Lent, and A. Nunez. Smart WWW traffic balancing. Proceedings of the IEEE Comm. Society Workshop on IP Operations and Management, pages 15-22, October 2003.
- E. Gelenbe, M. Gellman, and Pu Su. Self-awareness and adaptivity for QoS. Proceedings of the IEEE International Symposium on Computers and Communications, pages 3-9, June 2003. Invited Paper.

### 3.2.5 Bioinformatics

- H. Kim and E. Gelenbe “Steady-state analysis of gene regulatory networks via G-network model”, accepted for publication in *BMC Genomics* (Impact Factor 3.93), and *The International Conference on Bioinformatics (InCoB) 2009*, Asia-Pacific Bioinformatics Network (APBioNet), Singapore, 7-11 September 2009.
- E. Gelenbe and S. Timotheou “Random neural networks with synchronized interactions, *Neural Computation* 20: 2308–2324, 2008.
- E. Gelenbe “Dealing with software viruses: a biological paradigm”, *Information Security Technical Reports* 12: 242-250, Elsevier Science, 2007.
- E. Gelenbe “Network of interacting synthetic molecules in equilibrium, *Proc. Royal Society A (Mathematical and Physical Sciences)* 464(2096): 2219-2228, August 2008.
- E. Gelenbe “Steady-state solution of probabilistic gene regulatory networks”, *Physical Review E*, 76(1), 031903 (2007), also in *Virtual Journal of Biological Physics Research*, September 15, 2007.
- E. Gelenbe “Keeping viruses under control”, *Proceedings of the 20th International Symposium on Computer and Information Sciences (ISCIS 2005)*, Lecture Notes in Computer Science Vol. 3733, Istanbul, Turkey, 26-28 October 2005. Springer.

### 3.2.6 Artificial Neural Networks and Machine Learning

- E. Gelenbe and S. Timotheou. Synchronized interactions in spiked neuronal networks. *The Computer Journal*, 51(6):723–730, 2008.
- M. Georgiopoulos, R. F. DeMara, A. J. Gonzalez, A. S. Wu, M. Mollaghasemi, E. Gelenbe, M. Kysilka, J. Secretan, C. A. Sharma, A. J. Alnsour “A Sustainable Model for Integrating Current Topics in Machine Learning Research into the Undergraduate Curriculum”, *IEEE Trans. on Education* 52 (4): 503–512.
- H. Abdelbaki, E. Gelenbe and T. Kocak “Neural Algorithms and Energy Measures for EMI Based Mine Detection”, *J. Differential Equations and Dynamical Systems*, 13 (1 & 2) pp.63-86 (2005).
- E. Gelenbe, Z.-H. Mao, Yan-Da Li “Function approximation by random neural networks with a bounded number of layers”, *J. Differential Equations and Dynamical Systems*, Vol. 12 (1&2), pp. 143–170, 2004.
- E. Gelenbe and T. Koçak “Wafer surface reconstruction from top-down scanning electron microscope images”, *Microelectronic Engineering*, Vol. 75, pp. 216–233, 2004.

### 3.2.7 Decision tools for Tactical Decision and Emergency Management

- A. Filippoupolitis, G. Loukas, S. Timotheou, N. Dimakis, and E. Gelenbe. Emergency response systems for disaster management in buildings. In *Proceedings of the NATO Symposium on C3I for Crisis, Emergency and Consequence Management*, Bucharest, Romania, May 2009. NATO Research & Technology Organisation. **Best Paper Award**.
- A. Filippoupolitis and E. Gelenbe. A distributed decision support system for building evacuation. In *Proceedings of the 2nd IEEE International Conference on Human System Interaction*, pages 323330, Catania, Italy, May 2009. IEEE, New York, NY, USA.
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- A. Filippoupolitis, E. Gelenbe, D. Gianni, L. Hey, G. Loukas, and S. Timotheou. Distributed agent-based building evacuation simulator. In *Proceedings of the Summer Computer Simulation Conference (SCSC '08)*, Edinburgh, UK, June 2008.
- A. Filippoupolitis, L. Hey, G. Loukas, E. Gelenbe, and S. Timotheou. Emergency response simulation using wireless sensor networks. In *Proceedings of the 1st International Conference on Ambient Media and Systems*, pages 18, Quebec City, Canada, February 2008. ICST, Brussels, Belgium.
- Erol Gelenbe, Varol Kaptan, Yu Wang, Nick S. Walmsley, P. Gardiner, P.V. Pearce, and J. Moffat. A dynamic model for identifying enemy collective behaviour. In *Proceedings of the 11th ICCRTS - Coalition Command and Control in the Networked Era*, Cambridge, UK, September 2006.
- Erol Gelenbe and Yu Wang. Modelling large scale autonomous systems. In *Proceedings of the 9th International Conference on Information Fusion*, pages 183189, 10-13 July 2006.

- Erol Gelenbe and Yu Wang. A mathematical approach for mission planning and rehearsal. In Raja Suresh, editor, *Defense Transformation and Network-Centric Systems*, volume 6249 of Proc. SPIE, pages 197207, May 2006.
- Varol Kaptan and Erol Gelenbe. Fusing terrain and goals: agent control in urban environments. In Belur V. Dasarathy, editor, *Multisensor, Multisource Information Fusion: Architectures, Algorithms, and Applications 2006*, volume 6242 of Proc. SPIE, pages 7179, April 2006.
- Erol Gelenbe and Yu Wang. A trade-off between agility and resilience. In *Proceedings of 13th TAINN*, pages 209218, Dokuz Eylul University (Turkey), 2004.
- Erol Gelenbe, Varol Kaptan, and Yu Wang. Biological metaphors for agent behavior. In *Computer and Information Sciences - ISCIS 2004: 19th International Symposium*, volume 3280 of *Lecture Notes in Computer Science*, pages 667675. Springer-Verlag, October 2004.
- Erol Gelenbe, Varol Kaptan, and Khaled Hussain. Simulating the navigation and control of autonomous agents. In Per Svensson and Johan Schubert, editors, *Proceedings of the Seventh International Conference on Information Fusion*, volume I, pages 183189, Mountain View, CA, June 2004. International Society of Information Fusion.
- E. Gelenbe, K. Hussain, and V. Kaptan “Simulating autonomous agents in augmented reality”, *Journal of Systems and Software*, 74 (3): 255-268, 2005.
- R. Ghanea-Hercock, E. Gelenbe, N. R. Jennings, O. Smith, D. N. Allsopp, A. Healing, H. Duman, S. Sparks, N. C. Karunatillake and P. Vytelingum “Hyperion: next-generation battlespace information services”, *The Computer Journal*, 50(6):632-645; doi:10.1093/comjnl/bxm063, 2007.

### 3.3 PhD Graduates 2003-09

George Loukas (BS National Technical University, Athens), Peixiang Liu (MSc Beijing University, MS UCF), Varol Kaptan (BS, MS METU, Ankara, MS UCF), Yu Wang (BSc, MSc Edinburgh), Michael Gellman (BS, MS, UCF), Pu Su (BS Tsinghua University, MS UCF), Georgia Sakellari (BS, MBA National Technical University, Athens)

### 3.4 Current PhD Students and Current/Recent Post-Docs

Research Fellows and Post-Doctoral Fellows: Antonio Di Ferdinando (PhD Newcastle-upon-Tyne), Daniele Gianni (PhD Università di Roma Tor-Vergata), Ricardo Lent (PhD University of Central Florida), Georgios Loukas (PhD Imperial College), Gülay Öke (PhD Bogaziçi University).

PhD Students: Stelios Timotheou (MSc Imperial, BS National Technical University, Athens), Avgostinos Filippoupolitis (MSc Imperial, BS National Technical University, Athens), Gokce Gorbil (BS MSc METU, Ankara), Timothy Leung (BSc UCL), Omer Abdelrahman (MSc Imperial), Laurence Hey (BSc Imperial), Kumaara Velan (BSc Malaysia, MSc Sheffield).

### 3.5 Conference Committees 2003-2009

- TPC Member, CRITIS09, the Conference on Critical Infrastructure Simulation,
- Network Control and Performance Evaluation track, 23rd IEEE International Conference on Advanced Information Networking and Applications (AINA 2009), University of Bradford, UK, May 2009.
- General Chair, British Computer Society, Visions of Computer Science Conference, September 22-24, 2008.
- TPC Member, DSOM 2008, 19th IFIP/IEEE International Workshop on Distributed Systems: Operations and Management Managing Large Scale Service Deployment, September 22-26, Samos Island, Greece.
- Technical Programme Committee Member of BIONETICS 2008, 3rd International Conference on Bio-Inspired Models of Network, Information, and Computing Systems, Hyogo, Japan, November 25-28, 2008.
- Technical Programme Committee Member Inter-Perf 2008 Workshop on Interdisciplinary Systems Approach in Performance Evaluation and Design of Computer & Communication Systems, colocated with Valuetools (<http://www.valuetools.org>) Athens Oct. 2008.
- Honorary Chair, 23rd ISCIS (International Symposium on Computer and Information Sciences, Istanbul Technical University, October 2008.
- General Chair, 15th IEEE Computer Society MASCOTS '07 (Modeling, Analysis and Simulation of Computer and Telecommunication Systems) Conference, Istanbul, Turkey, Oct. 24-26, 2007.
- Technical Programme Committee Member, 5th International Symp. Neural Networks, Beijing, China, September 24-28, 2008.
- Member of the Programme Committee, International Joint Conference on Biomedical Engineering Systems and Technologies (BIOSTEC-2008).

- Co-Chair of the Workshop on “Stochastic Networks and Internet Technology, Scuola Normale Superiore, Centro di Ricerca Matematica Ennio de Giorgi, Pisa, Italy, Sep. 16-22, 2007.
- Co-Chair of Bionetworks Workshop, IEEE MASS 2007 Conference, Pisa, Italy, Oct. 8, 2007.
- Honorary General Chair ISCIS Conferences 2003-2007.
- General Chair, IEEE Computer Society MASCOTS '03 (Modeling, Analysis and Simulation of Computer and Telecommunication Systems) Conference, Orlando, FL, Oct. 12-15, 2003.
- Programme Committee Member, IEEE Computer Society MASCOTS '04 (Modeling, Analysis and Simulation of Computer and Telecommunication Systems) Conference, Amsterdam, Nov. 2004.
- Programme Committee Member, IEEE IWQoS '05 (IEEE International Workshop on Quality of Service) Conference, Passau, Germany, June 21-23, 2005.
- Programme Committee Member, IEEE Computer Society MASCOTS '05 (Modeling, Analysis and Simulation of Computer and Telecommunication Systems) Conference, Atlanta, GA, Sep. 26-30, 2005.
- Programme Committee Member, AAMAS05, International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), Utrecht, July 27-29, 2005.
- Programme Committee Member, IFIP WG 7.3 Symposium on Computer Performance Modeling, Measurement and Evaluation, Juan-les-Pins, France, October 3-7, 2005.
- Programme Committee Member, IEEE International Conference on Pervasive Services (ICPS), Santorini, Greece, 11–14 July, 2005.
- Programme Committee Member ICANN International Conference on Artificial Neural Networks, 9-13 September 2007, Portugal.
- Programme Committee Member NGI 2007 (3rd Euro-NGI Conference on Next Generation Internet Networks - Design and Engineering for Heterogeneity).
- Programme Committee Member of TRIDENTCOM 2007, Third International IEEE/Create-Net Conference on Test beds and Research Infrastructures for the Development of Networks and Communities, February 5-8, 2006, Orlando, Florida USA.
- General Chair, IEEE Computer Society MASCOTS'07, Istanbul, Turkey.

### 3.6 Keynotes and Seminars 2009–2003

- Seminar “Travel delay in wireless networks” MedHocNets Workshop, June 29-30, Technion, Haifa, Israel.
- Seminar “Delay Analysis of Network Coding”, MIT LIDS Lab, Wednesday, April 22, 2009.
- **Plenary Keynote IFIP World Computer Conference 2008 (one of just two plenaries at this major bi-annual conference)** “Auctions and Cognitive Networks”, Milan, September 7-10, 2008.
- Tutorial “Fundamental problems in autonomic communications”, Budapest Tutorial and Workshop on Autonomic Communications and Component-ware, July 7-9, 2008.
- **Opening Plenary Keynote** “New Product Form Solutions for Stochastic Models: Discovery or Invention?”, ACM SIGMETRICS Achievement Award Speech, ACM SIGMETRICS 2008 Conference, Annapolis, June 3-6, 2008.
- Seminar “Spiked neuronal networks and gene regulatory networks: a common stochastic framework and method of solution”, The Initiative in Innovative Computing (IIC), Harvard University, Feb. 27, 2008, <http://iic.harvard.edu/seminars/02>
- Seminar, “The Cognitive Packet Network, MIT Laboratory for Information and Decision Sciences, Oct. 23, 2007.
- Seminar, “Réseaux de neurones impulsionsnels et réseaux stochastiques”, Colloquium Jacques Morgenstern, INRIA Sophia Antipolis, Oct. 11, 2007.
- Advanced School Organisation and Lectures, “Stochastic Networks and Internet Technology”, Scuola Normale Superiore, Centro di Ricerca Matematica, Pisa, Sep 11-19, 2007.
- Seminar, “Réseaux stochastiques et réseaux de neurones (Stochastic networks and neural networks)”, Laboratoire de Physique Théorique, Ecole Normale Supérieure, Paris, April 24, 2007.
- Seminar, “Fonctions booléennes et comportement stationnaire de réseaux stochastiques (Boolean functions and stationary behaviour of stochastic networks)”, INRIA, Rocquencourt, April 5, 2007.
- Invited Talk, “Neuronal communications and neuronal networks”, BIOWIRES2007 Workshop Sponsored by IBM and the US/UK ITA, Cambridge University, April 2-4, 2007.
- Seminar “The Cognitive Packet Network Project at Imperial College”, Dalle Molle Institute for Artificial Intelligence, Lugano, February 19, 2007.

- Seminar “Analysis of Gene Regulatory Networks”, (1) Cambridge Microsoft Laboratory, January 14, 2007, and (2) Mathematical Institute Complex Systems Seminar, Imperial College, February 13, 2007.
- Seminar “The Cognitive Packet Network Project at Imperial College”, IBM Research Laboratory, Hawthorne, USA, January 5, 2007.
- E. Gelenbe, “Analysis of automated auctions”, Opening Keynote, ISCIS 2006, 21th International Symposium, Istanbul, Turkey, November 1-3, 2006, Proceedings. Lecture Notes in Computer Science 4263 Springer 2006, ISBN 3-540-47242-8.
- Keynote “The role of basic research in information technology”, AICA (Italian Computer Society) National Conference, Cesena (Bologna), 21-22 September 2006.
- Seminar “Random neural networks: theory and some applications”, Conference on Biologically Inspired Neural Networks, Dedicated to Prof. Camillo Golgi on the centenary of his Nobel Prize in 1906, Università di Roma La Sapienza, 24-26 June 2006.
- Opening Keynote, “Measurements, Modelling, and Simulation of a Cognitive Packet Network”, 15th IASTED Int. Conf. on APPLIED SIMULATION AND MODELLING, ASM 2006, Rhodes, Greece, June 26-28, 2006.
- Seminar “Random neural networks and the control of packet networks”, Pazmany University Budapest, June 16, 2006.
- Keynote “Cyberwarfare: the challenges for security of data and assurance of information in 2015”, Whither Warfare Conference, Defence College Shrivenham, June 12-13, 2006.
- Seminar “Stochastic networks and biological models”, Genopôle, Programme Epignomique, Evry (France), March 31, 2006.
- Seminar “Sensible decisions in very large networks”, Department of Computer Science, University of Newcastle upon Tyne, March 19, 2006.
- Seminar “Cognitive Packet Networks”, Laboratoire de Recherche en Informatique, Université Paris-Sud, January 4, 2006.
- Keynote, “Towards Autonomic Networks”, Proc. IEEE/IPJ (Information Processing Society of Japan) International Symposium on Applications of the Internet, Jan. 23-27, 2006, Phoenix, ISBN 0-7695-2508-3, pp. 2–7, IEEE Computer Society and IEEE.
- Keynote, “Research and Development Test-Beds for Future Networks”, International Conference on Network Test-Beds – Tridentcom 2005, Trento, Italy, February 22–25, 2005.
- Keynote, “Towards user autonomy and network intelligence”, International Conference on Next Generation Internet (NGI EU FP6), April 18–20, Rome, Italy.
- Keynote, “User Cooperation and Autonomy in Autonomic Networks”, Networking 2005, May 2–6, 2005, Waterloo, Canada (<http://www.cs.uwaterloo.ca/conferences/networking2005/coming/program.html#keynote1>).
- Seminar, “Self aware networks and Quality of Service”, Seminar at the Technical University of Budapest, March 31, 2005.
- Keynote, “Users and Services in Intelligent Networks”, Technologies for Advanced Heterogeneous Networks First Asian Internet Engineering Conference, AINTEC 2005, Bangkok, Thailand, December 13-15, 2005, Proceedings Series: Lecture Notes in Computer Science, Vol. 3837, Cho, Kenjiro; Jacquet, Philippe (Eds.) 2005, IX, ISBN: 3-540-30884-9, pp. 30-45.
- “Fast adaptation with random neural networks”, Invited Paper, 17th Annual FLAIRS Conference, Miami, Florida, May 17-19, 2004.
- “Distributed neural network control of packet networks”, Keynote Paper, 13th TAINN (Turkish Artificial Intelligence and Neural Networks) Conference, Antalya, Turkey, June 10-12, 2004.
- “On stability problems for G-networks”, Invited Plenary, 24th International Seminar on Stability Problems for Stochastic Models, Jurmala, Latvia, September 10-17, 2004.
- “An approach to Quality of Service”, Keynote Paper, 19th International Symposium on Computer and Information Sciences, in Springer LNCS 3280, October 26–29, 2004.
- “Réseaux stochastiques généralisés: existence et unicité de solutions stationnaires, et applications au traitement des images et au contrôle de systèmes de communication”, Seminar, Laboratoire Jacques Louis Lions, University Paris VI, January 6 2004.
- “G-Networks: Controlled performance and learning, with applications to augmented reality and networks”, Seminar, University of Hanover, Institut of Informatics, February 2 2004.
- “Biologically inspired stochastic models with applications in neurobiology and computer Science”, Seminar, School of Informatics Colloquium, University of Edinburgh, April 21, 2004.

- “G-networks and product forms”, Seminar in the Engineering Department, Cambridge University, November 9 2004.
- “Spiking Neurons, Competing Agent Populations, and Network QoS Through Distributed Control” Seminar at the Computer Laboratory, Cambridge University, November 10 2004.
- “Adaptive Networks and QoS”, Seminar in the Telecommunications Institute, University of Lund (Sweden), November 30, 2004.
- Keynote Lecture, “Spiked Random Neural Networks, Product Forms, Learning and Approximation,” *Conference on Analytical and Stochastic Modelling Techniques and Applications*, European Simulation Multiconference, Nottingham, UK, 9-11 June 2003.
- Keynote Paper, “Applications of Spiked Recurrent Stochastic Networks”, ICANN’03, 13th International Conference on Artificial Neural Networks & 10th International Conference on Neural Information Processing, June 26–29, 2003.
- Invited Paper, “Review of Experiments in Self-Aware Networks”, 18th International Symposium on Computer and Information Sciences (ISCIS 2003), Nov. 3 – 5, Antalya, Turkey, in *Springer Lecture Notes in Computer Science LNCS 2869*, pp. 1 – 8, 2003.
- “Self-Aware Networks and Quality of Service”, Seminar, Department of Computer Science, North Carolina State University, February 5, 2003.
- “Self-Aware Networks and Quality of Service”, Microsoft Research Laboratories, Cambridge, UK, January 22, 2003.
- “Self-Aware Networks and Quality of Service”, Seminar, Dept. of Computer Science, Illinois Institute of Technology, Chicago Ill., July 24, 2003.
- “Self-Aware Networks and Quality of Service”, Seminar, Dept. of Computer Science, University of Manchester (UK), October 20, 2003.
- “Self-Aware Networks and Quality of Service”, Invited Paper, International Symposium on Computer Communications, *IEEE Communications Society*, June 30–July 3, 2003.
- “Self-Aware Networks and Quality of Service”, Keynote Lecture, International Network Optimization Conference, Evry/Paris, Oct. 27-29, 2003.
- “Some real-time algorithms for demining”, University of Pisa, Dept. of Computer Science, November 25, 2003.

## 4 Activities at UCF and Duke (1998–2003)

### 4.1 Research Grants 1994-2003 in the US

#### 4.1.1 Grants at UCF 1998–2003

Total Awards of \$4,143,089 as PI or Co-PI at the University of Central Florida:

- E. Gelenbe (PI) U.S. Army Stricom – Learning Stochastic Automata for Computer Generated Forces, \$40,000 – January 1, 1999 – June 30, 2000.
- E. Gelenbe (PI) U.S. Army Stricom N61339-00-K0002 “Interacting assemblies of learning agents”, \$127,436.
- (PI) U.S. Army Stricom N61339-00-K0002/Ta “Performance of simulated agents with genetic algorithms and reinforcement learning”, \$195,384.
- R. Guha, M. Bassiouni, E. Gelenbe (Co-PI) NSF EIA0086251 – Introducing Fundamental Concepts and Evaluation Methods for Distributed Systems and Applications, \$530,000 – January 1, 2001 – December 31, 2003.
- E. Gelenbe (PI) U.S. Army Stricom via NAWC N61339-02-C0050 – Behavioral Simulation in Computer Generated Forces, \$219,000 – January 1, 2000 – September 30, 2002.
- Cooperative Agreement U.S. Army Stricom – The Matrix Lab, \$3,790,000 – December 8, 2000 – September 30, 2003.
- E. Gelenbe (PI) NAWCTSD – Target Overlay and aimpoint determination, \$209,400 – March 1, 2000 – September 30, 2001.
- E. Gelenbe (PI) U.S. Army Stricom N16339-01-D-002/Ta – Wearable Computer Network,
- E. Gelenbe (PI) U.S. Army Stricom N61339-01-D-002/Ta – Technical Advisory Board, \$40,000 – October 1, 2001 – September 31, 2002.
- G. Li, M. Bassiouni, P. Delfyett, E. Gelenbe (Co-PI), Li Kam Wa, J. Moharam NSF/IGERT DGE0114418 Optical Communications and Networking, \$2,100,000, November 1, 2001 – Oct. 30, 2006.
- E. Gelenbe (PI) NAWC N61339-02-C0080 – Cooperating Teams of Robotic Intelligent Entities (COTERIE), \$216,481 – May 1, 2002 – May 30, 2004.
- E. Gelenbe (PI) U.S. Army Stricom via NAWC N61339-02-C0117 – Simulating Dynamically Reconfigurable Ad-Hoc Networks to Maximize Dependability and QoS, \$80,000 – May 1, 2002 – December 31, 2004.

- Wei Li, M. Georgiopoulos, E. Gelenbe (Co-PI), Z. Qu, P. Wahid NSF ECS0216381 – Wireless Communication Emulator for Wireless Communications Lab, \$100,475 – August 5, 2002 – September 30, 2003.
- M. Georgiopoulos, E. Gelenbe (Co-PI) NSF EIA0203446 – Combined Research and Curriculum Development in Machine Learning, \$407,000 - May 1, 2002 - September 30, 2005.
- E. Gelenbe (PI) - Mathematical Models of Quality of Service, Army Research Office DAAD190310135, \$265,000 – June 1, 2003 - Jan. 31, 2005.
- R. Guha (PI), M. Bassiouni (Co-PI), E. Gelenbe (Co-PI 30%) - High performance cluster computing, Army Research Office DURIP W911NF0410100, \$270,000 – May 13, 2004 - May 12, 2005.
- E. Gelenbe (PI), K. Hua, N. Lobo, M. Shah (PI) Harris Corporation – AIMS: Advanced Image Management Systems, \$250,000 – July 1, 1998 – June 30, 1999.
- E. Gelenbe, A. Mukherjee (PI) Lucent Technologies – Semiconductor Photoresist Shape Reconstruction from Scanning Electron Microscopy, \$272,523 – May 1, 1999 - June 30, 2004.
- E. Gelenbe (PI) DPT Corp. & I-4 Corridor, – Performance of RAID Controllers \$104,000 - May 1, 1999 - April 30, 2000.
- E. Gelenbe (PI) DPT Corp. & I-4 Corridor – Performance of RAID Controllers (Continuation), \$98,000 - January 15, 2000 - December 30, 2000.
- E. Gelenbe (PI) SEO Corp. & I-4 Corridor – Vehicle classification from top-down infrared laser telemetry, \$36,000 - March 15, 1999 - June 30, 2000.
- E. Gelenbe (PI) SEO Corp. & I-4 Corridor – Software based methods to automatically evaluate trainees, \$30,000 - January 1, 2000 - December 31, 2000.
- E. Gelenbe (PI) Gigaset Corp. – Design and evaluation of Cognitive Packet Networks, \$40,000 - September, 2000 - December 31, 2000.
- E. Gelenbe (PI) Adaptec Corp. – Adaptive RAID Controller Design - \$225,500, December 2000 - December 31, 2003.

#### 4.1.2 Grants at Duke University 1994–1998

Total in excess of \$1.6 Million, including:

Federal Research Grants at Duke University

- (Co-PI) NSF Instrumentation grant – Equipment for parallel processing, \$ 65,000. July 1995–June 1997.
- (Co-PI) NSF Planning Grant, \$50,000, Jan. 1, 1994 – June 30, 1994.
- (PI) DOE PhD Fellowship via the Free Electron Laser Laboratory \$36K. September 1994–August 1996.
- (PI) NATO – Adaptive Videoconferencing, \$6.3K (Travel Grant), 12 months. January 1996–December 1996.
- (PI) NSF – Workshop on Biologically Inspired Autonomous Systems, \$8.2K, 12 months – March 1996.
- (PI) ONR – New Biologically Inspired Models for Large Scale Recurrent Networks, \$298K, 36 months, November 1996 – November 1999.
- (PI) ESPRIT EEC Grant – Load balancing in distributed systems, \$289,820 (ECU 236,000), June 15, 1994–June 14, 1997.
- (Joint-PI) ARO – Modeling and ATR for Ground Penetrating Radar, \$375,000, 36 months, starting January 1996.
- (Co-PI) ARO – MURI on Demining, Portion of Grant for Gelenbe’s Work \$233,360, 36 months, October 1996 – September 1999.
- (PI) ARO – Autonomous Search for Mines, \$104,000, 36 months, January 1998 – January 2001.

Industry Grants and Contracts at Duke University

- (PI) IBM Equipment Grant – Laboratory for network and distributed simulation, \$47K, September 1993–August 1994.
- (PI) IBM – Advances in ATM, \$12K, 6 months, January 1994–June 1994.
- (PI) IBM – Adaptive control of communication networks, \$ 14K, 12 months, September 1994 – August 1995.
- (PI) IBM – Neural methods for computer-communication networks, \$ 50K, 12 months. December 1994–December 1995.
- (Co-PI) Sandoz Foundation – Geometric recurrent random neural networks for segmentation of brain MRI scans, \$ 60K, 12 months. January 1995–December 1995.
- (PI) Lord Foundation – Geometric recurrent random pulsed networks for segmentation of brain MRI scans, \$8K, 12 months. January 1996–December 1996.

- (PI) IBM – Stability of large ATM networks, \$ 50K, 12 months. July 1995–June 1996.
- (PI) IBM – Call Admission Control in ATM Networks (Ph.D. Fellowship), \$14K, 12 months, September 1995–August 1996.
- (PI) IBM – Adaptive control of ABR traffic in ATM, \$50K, 12 months. December 1995–December 1996.
- (PI) IBM – Performance of RSVP Protocols for Communication Networks, \$30K, 12 months, December 1996 to December 1997.
- (PI) Lord Foundation – Enhancing the Competitiveness of the ECE Department at Duke University, \$109,500, July 1, 1997 – June 30, 1998.
- (PI) Lord Foundation – Intelligence in Motion, \$15,490, July 1, 1997 – June 30, 1998.

## 4.2 Patents

- U.S. Patent 5,995,651: E. Gelenbe, Y. Feng “Image content classification methods, systems and computer programs using texture patterns”, Nov. 30, 1999.
- U.S. Patent 6,222,824: G. Marin, X. Mang, E. Gelenbe, R. Onvural “Statistical call admission control”, April 24, 2001.
- U.S. Patent 6,804,201: E. Gelenbe “Cognitive Packet Network”, October 11, 2004.

## 4.3 Journal Articles 1998–2002

- E. Gelenbe, K. Harmanci, J. Krolik “Learning neural networks for detection and classification of synchronous recurrent transient signals”, *Signal Processing*, Vol. 64 (3), pp. 233-247, 1998.
- E. Gelenbe, Y. Cao “Autonomous search for mines”, *European Journal of Operations Research*, Vol. 108 (2), pp. 319-333, July 1998.
- H. Bakircioglu, E. Gelenbe, T. Koçak, “Image processing with the Random Neural Network model”, *ELEKTRIK*, Vol. 5 (1), pp. 65-77, 1998.
- E. Gelenbe, A. Labed “G-networks with multiple classes of signals and positive customers”, *European Journal of Operations Research*, Vol. 108 (2), pp. 293-305, July 1998.
- C. Cramer, E. Gelenbe, P. Gelenbe “Image and video compression”, *IEEE Potentials*, February/March 1998.
- E. Gelenbe, C. Cramer “Oscillatory corticothalamic response to somatosensory input”, *Biosystems*, Vol. 48 (1-3), pp. 67-75, 1998.
- E. Gelenbe, Z.-H. Mao, Y.-D. Li “Function approximation with spiked random networks”, *IEEE Trans. on Neural Networks*, Vol. 10, No. 1, pp. 3–9, 1999.
- Y. Feng and E. Gelenbe “Adaptive object tracking and video compression,” *Network and Information Systems Journal*, Vol. 1, No. 4-5, pp. 371–400, 1999.
- E. Gelenbe and A. Ghanwani “Approximate analysis of coupled queueing in ATM networks”, *IEEE Communications Letters*, Vol. 3, No. 2, pp. 31–33, 1999.
- E. Gelenbe, J.M. Fourneau “Random neural networks with multiple classes of signals,” *Neural Computation*, Vol. 11 (4):953–963, 1999.
- E. Gelenbe, P. Kammerman, T. Lam “Performance considerations in totally mobile wireless”, *Performance Evaluation*, Vol. 36-37, pp. 387-399, October 1999.
- E. Gelenbe and T. Koçak “Area-based results for mine detection”, *IEEE Trans. on Geoscience and Remote Sensing*, Vol. 38, No.1, pp. 1–14, January 2000.
- C. Cramer, E. Gelenbe “Video quality and traffic QoS in learning-based subsampled and receiver-interpolated video sequences”, *IEEE Journal on Selected Areas in Communications*, Vol. 18, No. 2, pp. 150–167, February 2000.
- E. Gelenbe, H. Shachnai “On G-networks and resource allocation in multimedia systems”, *European Journal of Operational Research*, Vol. 126, No. 2, pp. 308–318, October 2000.
- E. Gelenbe, “The first decade of G-networks”, *European Journal of Operational Research*, Vol. 126, pp. 231–232, October 2000.
- E. Gelenbe, V. Srinivasan, S. Seshadri, and N. Gautam, Optimal Policies for ATM Cell Scheduling and Rejection, *Telecommunication Systems*, 18 (4), pp. 331-358, Dec. 2001, DOI 10.1023/A:1016782028027.
- E. Gelenbe, E. Şeref, Z. Xu, “Simulation with learning agents”, *Proceedings of the IEEE*, Vol. 89 (2), pp. 148–157, Feb. 2001.

- E. Gelenbe, R. Lent, Z. Xu, “Design and performance of cognitive packet networks”, *Performance Evaluation*, Vol. 46, pp. 155-176, 2001.
- E. Gelenbe, Q. Zhu, “Adaptive control of prefetching”, *Performance Evaluation*, Vol. 46, pp. 177-192, 2001.
- E. Gelenbe, R. Lent, Z. Xu, “Measurement and performance of a cognitive packet network”, *Computer Networks*, Vol. 37, pp. 691-791, 2001.
- E. Gelenbe, J.M. Fourneau “G-Networks with resets”, *Performance Evaluation*, Vol. 49, pp. 179-192, 2002, also in *Proc. IFIP WG 7.3/ACM-SIGMETRICS Performance '02 Conf.*, Rome, Italy, October 2002.
- E. Gelenbe, K. Hussain “Learning in the multiple class random neural network”, *IEEE Trans. on Neural Networks* 13 (6), 1257–1267, 2002.

#### 4.4 Conference Papers 1998–2002

1. E. Gelenbe “Cognitive Packet Networks”, Keynote Address, CNDS02 (Conference on Communication Networks Modeling and Simulation), Winter Simulation Conference, Society for Computer Simulation, San Antonio, Texas, Jan 27–30, 2002.
2. E. Gelenbe, V. Kaptan, E. Gelenbe “Simulating Autonomous Agents with Augmented Reality”, SPIE Conference 4716, Session 5, Orlando, FL, April 1–5, 2002.
3. E. Gelenbe “Gelenbe Networks”, Invited Opening Tutorial, TOOLS '92 Conference, Imperial College, London (UK), April 15, 2002.
4. E. Gelenbe, R. Lent, A. Nunez, Z. Xu “Experiments with QoS Driven Learning Packet Networks”, SCS 2002 International Symposium on Performance Evaluation of Computer and Telecommunication Systems, SPECTS 2002, June 14-17, San Diego, CA.
5. E. Gelenbe “Gelenbe Networks – Queuing Networks with Control Functions”, Plenary Talk, July 2, 2002, Madrid Conference on Queuing Theory, Complutense University Madrid, July 1-6, 2002.
6. E. Gelenbe and R. Lent “Mobile Ad-Hoc Cognitive Packet Networks”, IEEE ASWN, Paris, July 2-4, 2002.
7. E. Gelenbe, R. Lent, Z. Xu “Networking with Cognitive Packets”, ICANN 2002 (International Conference on Artificial Neural Networks), Full paper with oral presentation, August 27-30, 2002, Madrid, Spain.
8. E. Gelenbe “G-Networks: Multiple Classes of Positive Customers, Signals, and Product Form Results”, in M.C. Calzarossa and S. Tucci eds., *Performance Evaluation of Complex Systems, Techniques and Tools*, Springer Lecture Notes in Computer Science No. 2459, Berlin, September 2002.
1. E. Gelenbe, R. Lent, Z. Xu “Towards networks with cognitive packets”, Opening Invited Paper, Proceedings of the International Conference on Performance and QoS of Next Generation Networking, Nagoya, Japan, November 2000, in K. Goto, T. Hasegawa, H. Takagi and Y. Takahashi (eds.), *Performance and QoS of Next Generation Networking*, Springer Verlag, London, 2001.
2. E. Gelenbe and R. Wang “Evaluating neural network reconstruction of wafer profile from electron microscopy”, Electronic Imaging 2001, IST & SPIE, San Jose, January 20-26, 2001.
3. E. Gelenbe, R. Lent, Z. Xu “Self-routing packet networks”, TERENA Networking Conference 2001, Antalya, Turkey, 16 May, 2001
4. E. Gelenbe, R. Lent, Z. Xu “Self-routing packet networks”, AFRICOM 2001, IFIP International Conference on Communication Systems - Cape Town, 28-30 May 2001.
5. E. Gelenbe “Simulation with goal oriented learning agents”, EUROSIM 2001 - Delft University of Technology - Delft, Netherlands, 26-30 June 2001.
6. E. Gelenbe, J.M. Fourneau “G-networks with resets”, Workshop on Mathematical Modeling and Analysis of Computer Systems, ACM SIGMETRICS and IFIP WG 7.3, Harvard University, June 20, 2001.
7. E. Gelenbe, R. Lent, Z. Xu “Dependable Design of Cognitive Packet Networks”, Invited Keynote Paper, Conference on Design of Reliable Communication Networks in Budapest (Hungary), October 8, 2001.
8. E. Gelenbe, Khaled Hussain, Varol Kaptan “Simulating Autonomous Agents with Augmented Reality”, Opening Keynote Lecture, *Proc. Games-On*, Second International Conference on Intelligent Games and Simulation, Society for Computer Simulation (SCS), London, November 30 to December 1, 2001.
1. E. Gelenbe, E. Şeref, Z. Xu “Discrete event simulation using goal oriented learning agents”, *AI, Simulation & Planning in High Autonomy Systems*, SCS, March 6–8 2000, Tucson, Arizona.
2. E. Gelenbe “Towards networks with cognitive packets”, Invited Talk, *Invitational Conference on the Global Course of the Information Revolution: Technical Trends*, RAND Corp. and Carnegie-Mellon University, May 10-12 2000, Pittsburgh, PA.

3. E. Gelenbe, C. Cramer “Response of cortico-thalamic oscillations to somatosensory input”, Invited Key-Note Paper, *TAINN: Turkish Artificial Intelligence and Neural Networks Symposium*, June 20-23 2000, Izmir, Turkey.
4. E. Gelenbe “G-Networks: Modeling and simulation of networks with control”, Invited Key-Note Paper, *SPECTS 2K: 2000 Symposium on Performance Evaluation of Computer and Telecommunication Systems, and SCSC 2K: 2000 Summer Computer Simulation Conference*, July 16-20 2000, Vancouver, Canada.
5. S. El-Khamy, E. Gelenbe, H. Abdelbaki “Neural network based spread spectrum PN code acquisition system”, *IEEE International Joint Conference on Neural Networks*, IEEE Press, July 24-26 2000, Como, Italy.
6. E. Gelenbe, R. Wang “Neural network methods for top-down surface reconstruction from scanning electron microscopy images”, *IEEE International Joint Conference on Neural Networks*, IEEE Press, July 24-26 2000, Como, Italy.
7. E. Gelenbe, R. Lent, Z. Xhu “Networks with Cognitive Packets”, Invited Paper 1, MASCOTS 2000, IEEE Eighth International Symposium on Modeling Analysis and Simulation of Computer and Telecommunication Systems, August 29-September 1, 2000, San Francisco, CA.
8. B. Foss, E. Gelenbe, K. Hussain, N. Lobo, H. Bahr “Simulation driven virtual objects in real scenes”, *Proc. ITSEC 2000*, Orlando, FL, November 2000.
1. Erol Gelenbe “Stability of large ATM networks”, Opening Key-Note Paper, *Proc. BAS 99*, pp. 1–24, Istanbul, May 1999.
2. Erol Gelenbe “Simulation in the search for landmines”, Invited Plenary Paper, *Proc. European Simulation Multi-conference*, Warsaw, May 1999.
3. A.H. Abdelbaki, E. Gelenbe “Random neural network decoder for error correcting codes”, *International Joint Conference on Neural Networks*, IEEE Press, 1999.
4. A.H. Abdelbaki, E. Gelenbe, T. Koçak “Matched neural filters for EMI based mine detection”, *International Joint Conference on Neural Networks*, IEEE Press, 1999.
5. E. Gelenbe “Interacting assemblies of goal-based learning agents,” Invited presentation, in P. Fishwick, A. Uhrmacher, B. Zeigler eds., *Agent Oriented Approaches in Distributed Modeling and Simulation: Challenges and Methodologies*, Dagstuhl Seminar Report No. 245, Dagstuhl (Germany), July 4-7, 1999.
6. E. Gelenbe, P. Kammerman, T. Lam “Performance considerations in totally mobile wireless”, *Performance '99: WG 7.3 International Conference on Modeling and Performance Evaluation of Computer Systems and Networks*, October 1999, Istanbul, Turkey.
7. E. Gelenbe, Jun Wang “QoS management with delays and cell drops”, *Performance '99: WG 7.3 International Conference on Modeling and Performance Evaluation of Computer Systems and Networks*, October 1999, Istanbul, Turkey.
8. E. Gelenbe, E. Şeref, Z. Xu “Towards networks with intelligent packets”, Opening Key-Note Paper, *Proc. IV-th International Symposium on Computer and Information Sciences*, pp. 1-11, October 18-20 1999, Izmir, Turkey.
9. E. Gelenbe, Esin Seref, Zhiguang Xu “Towards networks with intelligent packets”, *IEEE-ICTAI Conference on Tools for Artificial Intelligence*, Chicago, November 9-11, 1999.
10. E. Gelenbe “Modeling CGF with learning stochastic finite-state machines”, *Proc. 8-th Conference on Computer Generated Forces*, pp. 113-116, Orlando, May 11-13, 1999.
1. Erol Gelenbe, Patrick Kammerman, Teresa Lam “Mobile base station navigation and call hand-off in totally mobile wireless”, Invited Paper, Computer Networking Track, *Proc. 37th IEEE Conference on Decision and Control*, Tampa, December 1998.
2. Juan-Manuel Barrionuevo, Erol Gelenbe, Evrim Icoz “Delay-based call admission control in ATM”, Invited Paper, Computer Networking Track, *Proc. 37th IEEE Conference on Decision and Control*, Tampa, December 1998.

#### 4.5 Conference Committees (partial list) 1994-2002

- Honorary Chair of the International Symposia Series on Computer and Information Systems (ISCIS), that I founded in 1986 and that takes place annually in Turkey in October of each year, with Proceedings published by CRC Press, Springer Verlag and other publishers. Every year since 1986.
- General Chair and Programme Committee Member, IEEE Computer Society MASCOTS '94 (Modeling, Analysis and Simulation of Computer and Telecommunication Systems) Conference, Durham, NC, Jan. 31 to Feb. 4, 1994.
- General Chair and Programme Committee Member, IEEE Computer Society MASCOTS '95 (Modeling, Analysis and Simulation of Computer and Telecommunication Systems) Conference, Durham, NC, Jan. 18-20, 1995.
- General Chair, ACM SIGMETRICS/IFIP WG 7.3 Symposium on Computer Performance Modeling, Measurement and Evaluation, Istanbul, Turkey, October, 1999.

- Co-Programme Chair, Workshop on Mathematical Modeling and Analysis of Computer Systems (MAMA), ACM SIGMETRICS and IFIP WG 7.3, Harvard University, June 20, 2001.
- Programme Committee Member, ACM SIGMETRICS/IFIP WG 7.3 Symposium on Computer Performance Modeling, Measurement and Evaluation, Rome, Italy, October, 2002.

## 4.6 Keynotes and Seminars 1998-2002

- Invited Plenary, “Gelenbe Networks – Queueing Networks with Control Functions”, July 2, 2002, Madrid Conference on Queueing Theory, Complutense University Madrid, July 1-6, 2002.
- Invited plenary, “Simulation with Augmented Reality”, Perspectives on the Future of Modeling and Simulation, Summer Computer Simulation Conference, July 17, 2002.
- Opening Keynote, “Cognitive Packet Networks: QoS and Performance”, IEEE Computer Society MASCOTS02 Symposium, ISBN 0-7695-1840-0, 3 – 12, Fort Worth, TX, Oct. 14, 2002.
- Keynote, “Cognitive Packet Networks”, CNDS02 (Conference on Communication Networks Modeling and Simulation), Winter Simulation Conference, Society for Computer Simulation, San Antonio, Texas, Jan 27–30, 2002.
- Invited Opening Tutorial Lecture, “Gelenbe Networks”, TOOLS '02 Conference, Imperial College, London (UK), April 15, 2002.
- “Design and Measurement of Cognitive Packet Networks”, Seminar at Bogaziçi University, Computer Engineering Department, Istanbul, Turkey, March 13, 2002.
- “Self-routing packet networks”, Seminar, Department of Computer Science, University of Maryland, College Park, August 15, 2002.
- “Design and Performance of Cognitive Packet Networks”, The Dean’s Seminar Series, College of Engineering, University of Florida, Gainesville, January 16, 2002.
- “Cognitive Packet Networks”, Seminar at the Department of Computer Science, University of Houston, Texas, April 25, 2002.
- “Adaptive Network Architecture using Random Neural Network Routing”, Seminar at the Department of Computing, Imperial College, University of London, England, May 15, 2002.
- “Cognitive Packet Networks”, Seminar at the Institut Montefiore, University of Liège, Belgium, June 17, 2002.
- “G-réseaux – nouvelles formes-produit de réseaux stochastiques: existence, unicité et application à l’analyse de grands systèmes”, Seminar at INRIA, Rocquencourt, France, June 18, 2002.
- “G-réseaux – nouvelles formes-produit de réseaux stochastiques: existence, unicité et application à l’analyse de grands systèmes”, Seminar at Ecole Normale Supérieure, Paris, France, June 19, 2002.
- “Cognitive Packet Networks”, Seminar at the DAI-Laboratorium, Technical University of Berlin, Germany, June 25, 2002.
- “Cognitive Packet Networks”, Seminar, IBM T.J. Watson Research Center, Yorktown Heights, NY, November 15, 2002.
- Keynote, “Self-routing packet networks”, AFRICOM 2001, IFIP International Conference on Communication Systems - Cape Town, 28-30 May 2001.
- Keynote, “Simulation with Augmented Reality”, EUROSIM, Delft University of Technology, Netherlands, 26-30 June 2001.
- Keynote, “Dependable Design of Cognitive Packet Networks”, Conference on Design of Reliable Communication Networks in Budapest (Hungary), October 8, 2001.
- Keynote, “Simulating Autonomous Agents with Augmented Reality”, Opening Keynote Lecture, *Proc. Games-On*, Second International Conference on Intelligent Games and Simulation, Society for Computer Simulation (SCS), London, November 30-December 1, 2001.
- Self-routing packet networks, School of Computational Science and Information Technology, Florida State University (Tallahassee), 5 February 2001.
- “Gelenbe Networks, a class of queueing networks with product form”, Department of Electrical Engineering, Princeton University, October 10, 2001.
- CPN: Conception d’un reseau actif avec acheminement de paquets a base de Qualite de Service”, Laboratoire LIP6, University of Paris VI, 12 March 2001.
- CPN: Acheminement de paquets base de qualite de service, Institut National des Télécommunications (France), 14 March 2001.

- Oscillatory corticothalamic response to somatosensory input, Technical University of Prague, 16 March 2001.
- “Design and Performance of Cognitive Packet Networks”, Georgia Center for Advanced Telecommunications Technologies, Georgia Tech, March 23, 2001.
- Adaptive routing in QoS oriented Adhoc Networks, Koç University, Istanbul, 11 May 2001.
- Self-routing packet networks, TERENA Networking Conference 2001, Antalya, Turkey, 16 May, 2001
- “Cognitive Packet Networks”, Seminar at MIT LIDS, June 21, 2001.
- “Cognitive Packet Networks”, Seminar at the Eurecom Institute in Sophia-Antipolis, France, July 24, 2001.
- “Simulation with Augmented Reality”, United Technologies Seminar Series, Boston University, September 28, 2001.
- “Performances et Qualité de Service dans les Réseaux à Paquets Cognitifs”, Ecole Normale Supérieure, Paris, December 20, 2001.
- “Cheminement du Trafic dans les Réseaux à Paquets Cognitifs”, INRIA, Rocquencourt, December 21, 2001.
- Opening Keynote, E. Gelenbe, R. Lent, Z. Xu “Towards networks with cognitive packets”, International Conference on Performance and QoS of Next Generation Networking, Nagoya, Japan, 21 November 2000, in K. Goto, T. Hasegawa, H. Takagi and Y. Takahashi (eds.), Performance and QoS of Next Generation Networking, Springer Verlag, London, 2001.
- Invited Paper, “Towards networks with cognitive packets”, Invitational Conference on the Global Course du Information Revolution: Technical Trends, RAND Corp. and Carnegie-Mellon University, 10-12 May 2000, Pittsburgh.
- Keynote Paper, E. Gelenbe, R. Lent, Z. Xu “Towards networks with cognitive packets”, Proc. IEEE MASCOTS Conference, ISBN 0-7695-0728-X, pp. 3-12, San Francisco, CA, August 29-Sep.1 , 2000.
- Reti de calcolatori con pacchetti cognitivi, Department of “Informatica e Sistemistica”, University of Pavia, July 2000.
- Reti generalizzate in forma prodotto, University of Pavia, July 2000.
- Towards networks with cognitive packets, University of California and ICSI, Berkeley, January 2000.
- Réseaux avec paquets cognitifs, University of Versailles Saint-Quentin, Laboratoire PRISM, May 2000.
- G-Networks: Modeling and simulation of networks with control, Opening Key-Note Paper, SPECTS 2K: 2000 Symposium on Performance Evaluation of Computer and Telecommunication Systems, and SCSC 2K: 2000 Summer Computer Simulation Conference, 16-20 July 2000, Vancouver, Canada.
- Goal based adaptive routing, Seminar at the Lorenz Mathematische-Physiche-Astronomische Centrum, Rijksuniversiteit Leiden, July 2000, Pays Bas.
- E. Gelenbe, C. Cramer Response of cortico-thalamic oscillations to somatosensory input, Opening Key-Note Paper, TAINN: Turkish Artificial Intelligence and Neural Networks Symposium, 20-23 June 2000, Izmir, Turkey.
- Invited Paper, “Autonomous search for information in an unknown environment”, Workshop on Cooperative Information Agents, Uppsala, Sweden, 31 July - 2 August 1999.
- Opening Keynote, “Stability of large ATM networks”, Proc. BAS 99, pp. 1-24, May 1999, Istanbul.
- Interacting assemblies of goal-based learning agents, Dagstuhl Seminar No. 245, in P. Fishwick, A. Uhrmacher, B. Zeigler eds., Agent Oriented Approaches in Distributed Modeling and Simulation: Challenges and Methodologies, 4-7 July 1999, Dagstuhl, Germany.
- Reti di calcolatori con pacchetti cognitivi, University of Modena, December 1999.
- Reti di calcolatori con pacchetti cognitivi, University of Roma Tor Vergata, Departement of “Informatica, Sistemi e Produzione”, December 1999.
- E. Gelenbe, E. Seref, Z. Xu, Towards networks with intelligent packets, Proc. IV-th International Symposium on Computer and Information Sciences, pp. 1-11, 18-20 October 1999, Izmir, Turkey.

## 5 Former PhD Students

### 5.1 PhDs Graduated in France & Current Positions

- Sophie Chabridon is with Institut National des Télécommunications, France.
- Alexandre Aussem is Professor of Computer Science, University of Lyon I (France).
- Jose Aguilar is an Associate Professor of Computer Science at the University of Merida (Venezuela).
- Christine Hubert is Assistant Professor of of Computer Science, Univ of Angers.
- Myriam Mokhtari is Associate Professor of Computer Science, University of Rheims (France).

- Ali Labeled is with Nortel Networks in Ottawa (Canada).
- Volkan Atalay is Associate Professor of Computer Engineering, Middle East Technical University (Turkey).
- Claude Poulain is with the company SAGEM in France.
- Alain Jean-Marie is a Professor at the University of Montpellier (France).
- Zhen Liu is a Manager at IBM Watson Research Center, Yorktown Heights, NY.
- Gilbert Harrus is with HP Labs in Grenoble, France.
- Vassilada Koubi is with industry in Greece.
- Tulin Atmaca is a Professor at Institut National des Télécommunications in Evry, France.
- Jean-Michel Fourneau is Professor of Computer Science, PRISM Laboratory, University of Versailles (France).
- Catherine Rosenberg is University Chair Professor and Department Head at the University of Waterloo.
- Gérard Hébuterne is Director of the Networks Department at Institut National des Télécommunications in Evry, France.
- Guy Bernard is Director of the Computer Science Department at Institut National des Télécommunications.
- François Baccelli is Professor of Computer Science at Ecole Normale Supérieure in Paris (France).
- Salvatore Tucci is Professor at the University of Rome II, and Director of the Prime-Minister's Office of Informatics, Italian Government, Rome (Italy).
- Guy Pujolle is Professor of Computer Science, PRISM Laboratory, University of Paris VI (France).
- Jacques Labetoulle is with the Telecoms Administration in France (Sophia Antipolis). (France).
- Andreas Staphylopatis is Professor of Electrical Engineering and Computer Science at the National Technical University in Athens (Greece).
- Georges Hébrail is Professor at Ecole Nationale des Télécommunications, after being Head of an R&D Department at Electricité de France.
- Jacques Lenfant rose to being President of the University of Rennes I (France).
- Dominique Potier heads Computer Science technical activities with the Thalès Group in Paris (France).
- Alain Kurinckx heads technical activities of the Networks Department of Thalès Group in Paris (France).
- Brigitte Plateau is Professor of Computer Science at the University of Grenoble.
- André Duda is Professor of Computer Science at the University of Grenoble.
- Jean-Marc Vincent is an Assistant Professor at the University of Grenoble.
- Philippe Nain and Guy Fayolle are Managers of Research Groups at INRIA, France.
- Rina Suros is Chair of the Computer Science Department at the Central University of Caracas (Venezuela).
- Geneviève Jomier is a Professor at University of Paris-Dauphine (France).
- Banh Tri An is a Professor at the University of Liège.
- François Bancilhon heads a Database company.
- Marisela Hernandez is an Associate Professor at the University of Amiens (France).
- Nicholas Spyratos is a Professor at University Paris-Sud (France).
- Nihal Pekergin is an Associate Professor at University Paris-Sorbonne (France).
- Ferhan Pekergin is an Associate Professor at University Paris XIII (France).
- Jean Vicard is an Associate Professor at University Paris XIII (France).
- Pierre Bouchet is a Professor at University Paris XIII (France).

## 5.2 PhDs Graduated in the USA

- Varol Kaptan is with Industry in London.
- Yutao Feng General Manager of Ambarella China [www.ambarella.com](http://www.ambarella.com)
- Ricardo Lent is Research Fellow at Imperial College.
- Qi Zhu is Associate Professor at the University of Houston.
- Khaled Hussain is Visiting Assistant Professor at the University of Central Florida.
- Taşkin Koçak is Senior Lecturer at the University of Bristol.

- Zhiguang Xu is an Assistant Professor at Valdosta State University (Georgia).
- Hossam Abdelbaki is an Assistant Professor at the University of Alexandria (Egypt).
- Anoop Ghanwani is with HP Labs, after working at Cosine Networks and IBM's Network Products Division.
- Vijay Srinivasan is with Willownetworks, after working at Lantern Networks and IBM.
- Chris Cramer is Assistant Research Professor at Duke University.
- Xiaowen Mang is at AT&T Research Labs.
- Rakesh Kuswhaha is Vice-President of mFormation (a start-up), after having been with AT&T Labs.

### 5.3 PhDs Graduated at Imperial College

- Mike Gellman is with KBC Financial Products UK Ltd, 111 Old Broad Street, London EC2N 1FP, michael.gellman@kbcfp.com
- George Loukas is with Imperial College.
- Yu Wang is with industry in London.
- Peixiang Liu is with Southeastern University (USA).
- Pu Su is at Microsoft (Redmond)
- Peixiang Liu is with Nova Southeastern University, Graduate School of Computer Science.
- Georgia Sakellari is with Imperial College.

## 6 Comprehensive List of Journal Papers 1970–2009

1. E. Gelenbe "Probabilistic automata with structural restrictions", SWAT 1969 (IEEE Symp. on Switching and Automata Theory), also appeared as "On languages defined by linear probabilistic automata", *Information and Control*, Vol. 16, 487-501, 1970.
2. E. Gelenbe "On the loop-free decomposition of stochastic finite-state systems", *Information and Control*, Vol. 17, No. 5, 474-484, December 1970.
3. E. Gelenbe "A realizable model for stochastic sequential machines", *IEEE Trans. Computers*, Vol. C-20, No. 2, 199-204, Feb. 1971.
4. E. Gelenbe, N. Rossi, "Uniform modular realisations and linear machines", *IEEE Trans. Computers*, Vol. C-20, No. 12, 1616-1617, December 1971.
5. E. Gelenbe, "The 2/3 rule for dynamic storage allocation under equilibrium", *Information Processing Letters*, Vol. 1, No. 2, pp. 59-60, 1971.
6. E. Gelenbe, P. Tiberio, "Multiprogrammazione e memoria virtuale", *Alta Frequenza*, Vol. XLI, No. 7, pp. 487-503, July 1972.
7. E. Gelenbe "The distribution of a program in primary and fast buffer storage", *Comm. ACM*, Vol. 16, No. 7, pp. 431-434, July 1973.
8. E. Gelenbe "An unified approach to the evaluation of a class of replacement algorithms", *IEEE Trans. Computers*, Vol. C-22, No. 6, pp. 611-618, June 1973.
9. E. Gelenbe, J. Boekhorst, J. Kessels, "Minimizing wasted space in partitioned segmentation", *Comm. ACM*, Vol. 16, No. 6, pp. 343-349, June 1973.
10. E. Gelenbe, P. Tiberio, J. Boekhorst "Page size in demand paging systems", ACM-SIGMETRICS, First Symp. on System Performance Evaluation, also in *Acta Informatica*, Vol. 3, No. 1, pp. 1-23, January 1974.
11. E. Gelenbe, J. Lenfant, D. Potier, "Analyse d'un algorithme de gestion simultanée mémoire centrale-disque de pagination", *Acta Informatica*, Vol. 3, pp. 321-345, 1974.
12. G. Fayolle, E. Gelenbe, J. Labetoulle, D. Bastin "The stability problem of broadcast packet switching networks", *Acta Informatica*, Vol. 4, pp. 49-53, 1974.
13. E. Gelenbe, J. Lenfant, D. Potier "Response time of a disk to transfer of variable length", *SIAM Journal on Computing*, Vol. 4, No. 4, pp. 461-473, December 1975.
14. E. Gelenbe "On approximate computer system models", *Journal ACM*, Vol. 22, No. 2, pp. 261-269, April 1975.
15. M. Badel, E. Gelenbe, J. Leroudier, D. Potier "Adaptative optimization of a time-sharing system", Invited paper *Proceedings of the IEEE* (Special issue on time-sharing systems), Vol. 63, No. 6, pp. 958-965, June 1975.
16. D. Potier, E. Gelenbe, J. Lenfant "Adaptative allocation of CPU quanta", *Journal ACM*, Vol. 23, No. 1, pp. 97-102, January 1976.

17. E. Gelenbe, R. Muntz "Probabilistic models of computer systems - Part I", *Acta Informatica*, Vol. 7, pp. 35-60, 1976.
18. E. Gelenbe, D. Derochette "Probabilistic behaviour of a computer system under intermittent failures", *Comm. ACM*, Vol. 21, No. 6, pp. 493-499, June 1978.
19. E. Gelenbe, "A model of roll-back recovery with multiple checkpoints", 2nd ACM Conference on Software Engineering, pp 251-255, October 1976, and appeared in Russian as "Model of information renewal by the method of multiple test-points", *Avtomatika y Telemekhanika*, No. 4, pp. 142-151, 1979.
20. G. Fayolle, E. Gelenbe, J. Labetoulle "Stability and optimal control of the packet switching broadcast channel", *Journal ACM*, Vol. 24, No. 3, pp. 375-386, 1977.
21. G. Gelenbe, G. Pujolle "An approximation to the behaviour of a single queue in a network", *Acta Informatica*, Vol. 7, pp. 123-136, 1976.
22. Banh-Tri-An, E. Gelenbe, "Simulation et amélioration d'un canal de diffusion sous contrôle", *R.A.I.R.O. (Informatique)*, Vol. 11, No. 3, 301-321, 1977.
23. E. Gelenbe, A Kurinckx "Random injection control of multiprogramming in virtual memory", *IEEE Trans. on Software Eng.*, January 1978.
24. G. Fayolle, E. Gelenbe, G. Pujolle "An analytical evaluation of the performance of the "send-and-wait" protocol", *IEEE Trans. on Communications*, vol. COM-26, pp. 313-319 March 1978.
25. C. Adams, E. Gelenbe, J. Vicard "An experimentally validated model of the paging drum", *Acta Informatica*, Vol. 11 pp. 103-117, 1979.
26. E. Gelenbe "On the optimum check-point interval", *Journal ACM*, Vol. 26, No. 2, pp 259-270, April 1979.
27. P. Bouchet, E. Gelenbe, S. Tucci, "Le choix d'une architecture permettant la reprise sur erreur dans les systèmes de gestion de données" *R.A.I.R.O. Informatique*, No. 3, 1978.
28. E. Gelenbe, J. Labetoulle, G. Pujolle "Performance evaluation of the HDLC protocol", *Computer Networks*, vol. 2: 409-415, December 1978.
29. E. Gelenbe "Diffusion approximations: waiting times and batch arrivals *Acta Informatica*, Vol. 12, 285-303, (1979).
30. E. Gelenbe, K. Sevcik "Analysis of update synchronisation algorithms for Multiple copy data bases, *IEEE Trans on computers*, Vol. C-28, No. 10, pp. 737-747, Oct. 1979.
31. Boguslavskii, E. Gelenbe "A communication protocol and a problem of couples queues", *Podstawy Sterowania*, Tom 10, No. 3, 149-158, 1980.
32. E. Gelenbe, R. Iasnogorodski "A queue with server of walking type", *Annales de l'Institut Henry Poincaré, Série B (Probabilités et Statistiques)*, Vol. XVI, No. 1, 63-73, 1980.
33. E. Gelenbe, A. Kurinckx, I. Mitrani "The rate control policy for multiprogramming control", *Comm. ACM*, 1980.
34. E.G. Coffman, E. Gelenbe, B. Plateau "Optimisation of the number of copies in a distributed data base", *IEEE Trans. on Software Eng.*, Vol. SE-7, No. 1, 78-84, January 1981.
35. E. Gelenbe, A. Lichnewsky, A. Staphylopatis "Experience with the parallel solution of partial differential equations on a distributed computing system", *IEEE Trans. on Computers*, Vol. C-31, No. 12, pp. 1157-1164, December 1982.
36. E. Gelenbe, D. Gardy "On the size of projections I" *Information Processing Letters*, Vol. 14, No. 1, pp. 18-21, March 1982.
37. E.G. Coffman, H.O. Pollack, E. Gelenbe, R. Wood "Analysis of parallel read sequential write systems", *Performance Evaluation*, Vol. 1, pp. 62-69, 1981.
38. A. Chesnais, E. Gelenbe, I. Mitrani, "On the modelling of parallel access to shared data", *Comm. ACM*, Vol. 26, No. 3, pp. 196-202, March 1983.
39. E. Gelenbe, "Stationary deterministic flows", *Theoretical Computer Science*, Vol. 23, 107-128, 1983.
40. F. Baccelli, E. Gelenbe, B. Plateau, "An end to end approach to the resequencing problem", *Journal ACM*, Vol. 31, No. 3, pp. 474-485, July 1984.
41. E. Gelenbe, S. Tripathi, D. Finkel "Performance and reliability of a very large distributed system", Proc. ACM-SIGMETRICS Conference on system Performance Evaluation, Austin, Texas, August 1985. Also appeared in *Acta Informatica*, Vol. 23, 643-655, 1986.
42. E.G. Coffman, E. Gelenbe, E.N. Gilbert, "Analysis of a conveyor queue in a flexible manufacturing system", *Proceedings Performance 86 (IFIP and ACM Joint Conference on Computer Performance Modelling)*, Raleigh, NC, May 1986. Also appeared in *European Journal of Operations Research*, Vol, 35, 383-392, 1988.

43. E. Gelenbe, D. Finkel, "Stationary deterministic flow II: the single server queue" *Theoretical Computer Science*, Vol. 52, 269-280, 1987.
44. S. Tripathi, D. Finkel, E. Gelenbe "Load sharing in a distributed system with failures", *Acta Informatica*, Vol. 25 (1988), 677-689.
45. E. Gelenbe "Temps d'exécution asymptotique d'un programme parallèle", *Comptes-Rendus Acad. Sci. Paris*, t. 309, Série I (1989), 399-402.
46. E. Gelenbe "Réseaux stochastiques ouverts avec clients négatifs et positifs, et réseaux neuronaux", *Comptes-Rendus Acad. Sci. Paris*, t. 309, Série II (1989), 979-982.
47. E. Gelenbe "Random neural networks with positive and negative signals and product form solution", *Neural Computation*, Vol. 1, No. 4, pp 502-510, 1989.
48. J. Bourrelly, E. Gelenbe "Mémoires associatives: évaluation et architectures", *Comptes-Rendus Acad. Sci. Paris*, t. 309, Série II (1989), 523-526.
49. E. Gelenbe "Réseaux neuronaux aléatoires stables", *Comptes-Rendus Acad. Sci.*, t. 310, Série II, p. 177-180, 1990.
50. E. Gelenbe "Stability of the random neural networks", *Neural Computation*, Vol. 2, No. 2, pp 239-247, 1990.
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