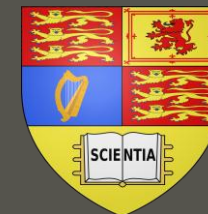


Erol Gelenbe, Dennis Gabor Professor in the Electrical & Electronic Engineering Dept. (EEE), is Head of the Intelligent Systems and Networks (ISN) Group since 2004. In the 2014 Research Excellence Framework evaluation of UK universities, Imperial's EEE Dept. was ranked 1<sup>st</sup> in its field *and the ISN Group was identified as having the "largest proportion of world leading outputs" in our Department.* According to ACM SIGMETRICS (2008), he is ["the single individual who, over a span of 30 years, has made the greatest overall contribution to the field of Computer System and Network Performance Evaluation."](#) IET (UK) awarded him the 2010 Oliver Lodge Medal as ["a true IT innovator"](#). He invented mathematical models such as G-networks to analyse the performance of computing systems and networks with control functions, and the Random Neural Network (a recurrent deep learning network). The Math Genealogy Project of the American Mathematical Society <http://genealogy.math.ndsu.nodak.edu/extrema.php> ranks him among the Top 50 most prolific PhD supervisors in the mathematical sciences of all times. He founded the team that developed the computer performance software QNAP marketed by SIMULOG, INRIA's first start-up. His FLEXSIM Manufacturing System Simulator inspired the Flexsim commercial tools. He invented the first "packet-voice" switch (EP80400817), and his Cognitive Packet Network (US6804201B1) currently evaluated by Huawei, is the first fully implemented autonomic packet network. Co-Technical Director of the £60M Centre on Data and Information Fusion in 2003-2009, he helped coordinate research of 10 universities and 8 industry partners in the UK. His recent papers appear in the Physical Review, Communications of the ACM, the Computer Journal, ACM/IEEE Transactions on Bioinformatics, Proceedings IEEE, IEEE Network, Neural Computation, ACM Transactions on Adaptive and Autonomous Systems, Proceedings of the Royal Society, and other IEEE and ACM Transactions. [On 26<sup>th</sup> June 2014, Mme FIORASO \(French Secretary of State for Research\) awarded Erol the Chevalier de la Légion d'Honneur, stating:](#) " .. j'ai fait des transferts de la recherche vers l'industrie l'une des missions officielles de la recherche publique ... mission dont vous vous étiez déjà emparé en contribuant à l'élaboration d'un logiciel de modélisation diffusé dans l'industrie, ou à l'élaboration de prototypes dans l'industrie des télécommunications ... Je pense aux autocommutateurs téléphoniques SYCOMORE pour lesquels vous avez déposé le brevet qui porte votre nom, au premier réseau à accès aléatoire sur fibre optique Xanthos." [Academy Fellowships](#) Royal Academy of Sciences, Letters and Arts of Belgium '15, Polish Academy of Sciences '13, Science Academy of Turkey '12, Hungarian Academy of Sciences '10, National Academy of Technologies of France '08, Academia Europaea '05 [Honours](#) France: Chevalier de la Légion d'Honneur '14, Officier de l'Ordre National du Mérite '02, Chevalier des Palmes Académiques '00, Italy: Grande Ufficiale dell'Ordine della Stella d'Italia '07, Commendatore dell'Ordine al Merito della Repubblica '05 [Awards](#) Fellow IEEE, FACM, FIET, IFIP Silver Core Award ('80), Parlar Foundation Science Award ('94), Grand Prix France Telecom French Academy of Sciences ('96), ACM SIGMETRICS Life-Time Achievement Award ('08), IET Oliver Lodge Medal ('10), [In Memoriam Dennis Gabor Prize Hungarian Academy of Sciences](#) ('13) [Honoris Causa Doctorates](#) Université de Liege '06, Bogazici University '04, Università di Roma Tor-Vergata '96



Department of Electrical & Electronic Engineering

Imperial College, London



A Symposium Honouring  
**Professor Erol Gelenbe**  
 21<sup>st</sup> – 24<sup>th</sup> September 2015

The Symposium addresses areas where Erol Gelenbe is active:  
 Science and Engineering Policy, Stochastic Networks, Computer and  
 Network Quality of Service, Machine Learning and Bioinformatics

## PROGRAMME

### 21<sup>st</sup> SEPTEMBER 2015

#### 9.30 | WELCOME & INTRODUCTION

- **Welcome:** Prof W. J. Stirling CBE FRS, Provost, Imperial College
- **Erol at Imperial since 2003** Prof Peter Cheung, Head Dept. of Electrical and Electronic Engineering, Imperial College
- **Impressions of a young Turc 1971** Prof Mania Pavella, Professor Emeritus, University of Liege
- **Erol's impact in France** Prof Gilles Bernot, University of Nice, Former President of the Informatics Section of the National Council of Universities of France
- **Prof Gelenbe's contributions to Turkey** Prof Ufuk Caglayan, Bogazici University, Istanbul

#### 10.15 | COFFEE

#### 10.45 | KEYNOTES I

- Chair:** Prof Jeff Magee FEng, Principal of the Faculty of Engineering, Imperial College
- **Vision for an engineering academy** Pierre Castillon Founding President (2000-2002) and Fellow National Academy of Technologies of France (NATF), Former CTO of Elf Aquitaine
  - **Can Europe have a telecoms industry?** Alain Bravo Vice-President and Fellow NATF, Director-General Emeritus of SUPELEC, Former CTO of Alcatel, Founder of SFR Mobile
  - **Can Internet protocols be replaced?** Louis Pouzin Laureate of the QE II Prize for Engineering & Medal of the NATF

#### 12.15 | LUNCH

#### 13.15 | KEYNOTES II

- Chair:** Prof Sir W.A. Wakeham FEng, Former Vice-Chancellor, University of Southampton
- **Towards an Internet of Things** Prof Manfred Broy Fellow Acatech and Leopoldina
  - **Toward flawless tele-presence – but how Dr Shannon?** Prof Lajos Hanzo FEng
  - **Building brains** Prof Steve Furber FRS FEng CBE
  - **Formal methods and verification: what have we achieved?** Prof Pierre Wolper, Fellow of the Royal Academy of Sciences, Letters and Arts of Belgium

#### 15.15 | COFFEE

#### 15.45 | KEYNOTES III

- Chair:** Dr Cyrille van Effenterre, Science Counsellor of the French Embassy
- **Supercomputing and data centres: revival of a French industry** Prof Gerard Roucairol, Fellow NATF, Former President of the NATF, Former CTO Bull
  - **The UK Defence Technology Centres: a model of collaborative research** Prof Phil Sutton FEng CBE
  - **Creative engineering under strong constraints** Prof Armand Hatchuel Fellow NATF, Ecole des Mines de Paris

18.00 - 19.00 | DRINKS FOLLOWED BY CONCERT | POLISH CLUB, Exhibition Rd  
19.00 | DINNER | POLISH CLUB

## PROGRAMME

### 22<sup>nd</sup> SEPTEMBER 2015

#### 9.30 | STOCHASTIC NETWORKS

**Chair:** Prof Jean-Michel Fourneau, University of Versailles, Saint-Quentin

- **Stochastic opinion dynamics (Keynote)** Francois Baccelli, UT Austin, Fellow of the French National Academy of Sciences, francois.baccelli@ens.fr
- **Exact simulation of the stationary distribution of some multi-dimensional queueing models (Keynote)** Karl Sigman, Columbia University

#### 10.30 | COFFEE

#### 11.00 | G-NETWORKS

**Chair:** Prof Adrian Segall, Bar Ilan University and Technion

- **G-network of unreliable queues (Keynote)** Jean-Michel Fourneau, University of Versailles Saint-Quentin, jmf@prism.evsq.fr
- **Zero-automaticity: from random walks on semigroups to queueing networks** Jean Mairesse, University of Pierre et Marie Curie and CNRS, Jean.Mairesse@lip6.fr
- **Adaptive control with random G-networks** Zhi-Hong Mao, Dept. of ECE and Bioengineering, University of Pittsburgh, zhm4@pitt.edu
- **Random neural networks: some applications and extensions** Gerardo Rubino, IRISA, France
- **Product-forms in G-networks** Andrea Marin, University Ca Foscari of Venice, marin@dais.unive.it

#### 13.00 | LUNCH

#### 14.00 | SYSTEM & NETWORK PERFORMANCE I

**Chair:** Dr Guy Fayolle, INRIA

- **Application of control theory to cyber-security (Keynote)** Alain Bensoussan, Ashbel Smith Chair Professor, University of Texas at Dallas, and Chair Professor City University Hong Kong, alain.bensoussan@utdallas.edu
- **The observability principle – implications for probabilistic modeling (Keynote)** Jeffrey P. Buzen, Fellow of the National Academy of Engineering (USA), jeffbuzen@comcast.net
- **Cartesian product partitioning of multi-dimensional reachable state spaces** Tugrul Dayar, Bilkent University, tugrul@cs.bilkent.edu.tr
- **Distributed optimization with imperfect and delayed information for optimal routing** Bruno Gaujal, INRIA, bruno.gaujal@inria.fr (with P. Coucheney, P. Mertikopoulos)

#### 15.45 | COFFEE

#### 16.15 | SYSTEM & NETWORK PERFORMANCE II

**Chair:** Prof Alain Jean-Marie, University of Montpellier

- **Markovian analysis of the IEEE 802.11 broadcast with waiting queues (Keynote)** Guy Fayolle, INRIA, guy.fayolle@inria.fr (with P. Muhlethaler)
- **Performance of non-cooperative routing over parallel queues** Olivier Brun, LAAS/CNRS, Toulouse, France, olivier.brun@laas.fr
- **Transients in computer system and network models: an analytical approach** Tadeusz Czachorski, IITIS, Polish Academy of Sciences, tadek@iitis.pl
- **Time-varying workloads and different time scales in a queueing control problem** Yingdong Ly, IBM Research, yingdong@us.ibm.com (with M. Sharma, M. S. Squillante, B. Zhang)

## PROGRAMME

### 23<sup>rd</sup> SEPTEMBER 2015 (with ISCIS 2015)

#### 9.00 | ISCIS 2015: WELCOME & OPENING REMARKS

- **Welcome and opening remarks** Prof Ali Dogramaci, Bilkent University
- **ISCIS and Erol Gelenbe's contributions** Prof Ufuk Caglayan, Bogazici University

#### 9.30 | KEYNOTES IV

Chair: Prof Ali Dogramaci, Bilkent University

- **Disruption by big data** Dr Francois Bancelhon, Data Publica
- **Models and methods for reducing the latency in parallel sparse iterative solvers and sparse matrix kernel** Prof Cevdet Aykanat, Bilkent University, aykanat@cs.bilkent.edu.tr
- **Software engineering in the systems context** Prof (Emeritus) Harold "Bud" Lawson, IEEE Computer Pioneer Award Winner, bud@lawson.se

#### 11.00 | COFFEE

#### 11.30 | KEYNOTES V

Chair: Prof Ufuk Caglayan, Bogazici University

- **Interoperability: the semantic Web and open linked data** Prof Emeritus Erich Neuhold, FACM, FIEEE, University of Vienna, erich.neuhold@univie.ac.at
- **Green computing** Prof Sartaj Sahni, FACM, FIEEE, Univ. of Florida, sahani.sartaj@gmail.com

#### 12.30 | LUNCH

#### 13.30 | KEYNOTES VI

Chair: Prof Robert Mahl, Ecole des Mines de Paris

- **Understanding life: a bioinformatics point of view** Jacek Blazewicz, Fellow of the Polish Academy of Sciences, Poznan University of Technology, jblazewicz@cs.put.poznan.pl
- **Discrete and hybrid modelling of gene networks: the example of the circadian rhythm** Gilles Bernot, University of Nice, bernot@unice.fr
- **Data-driven model estimation in network systems from observed equilibria** Ioannis Paschalidis, CISE, Boston University, yannisp@bu.edu

#### 15.00 | COFFEE

#### 15.30 | KEYNOTES VII

Chair: Prof Nihal Pekergin, Univ. Paris-Est

- **Entropy Estimation from Multivariate Data: Robust Assessment of Structural Complexity** Danilo Mandic, Imperial College
- **Flattening the tails of response times by using replicas** Peter Harrison, Imperial College London, p.harrison@imperial.ac.uk
- **Performance evaluation of .. a laser** Alain Jean-Marie, INRIA, ajm@lirmm.fr
- **Age of information: controlling the freshness of status updates under energy constraints** Elif Uysal-Biyikoglu, Middle East Technical University (with Y. Sun, T. Bacinoglu, E. Koksal)
- **Privacy in cyber-physical systems: information theoretic approach** Deniz Gunduz, Imperial College London

## PROGRAMME

### 24<sup>th</sup> SEPTEMBER 2015 (with ISCIS 2015)

#### 9.15 | MACHINE LEARNING & NEURAL NETWORKS I

Chair: Erol Gelenbe, Imperial College London

- **Machine learning approaches for predicting stationary time series** Prof Laszlo Gyorfi, Fellow of the Hungarian Academy of Sciences, lacigyorfi@gmail.com
- **Advances in kernel-based multi-task learning** Prof Michael Georgiopoulos, Dean of Engineering & Computer Science, Univ. of Central Florida, michaelg@ucf.edu (with C. Li, G. Anagnostopoulos)
- **Modeling and simulation of large neuronal ensembles** Dr Dan Goodman, Imperial College London
- **Online learning methods in adaptive communication** Dr Andras Gyorgy, Imperial College, gyorgy@ualberta.ca

#### 11.00 | COFFEE

#### 11.30 | MACHINE LEARNING & NEURAL NETWORKS II

Chair: Prof Michael Georgiopoulos, University of Central Florida

- **Brain-computer interfaces for silent speech** Prof Ugur Halici, Middle East Technical Univ. , halici@metu.edu.tr (with Y. R. Tabar, C. Cicek)
- **On-road vehical classification based on random neural network and bag-of-visual words** D Khaled Hussain, Chair Multimedia Dept., Assiut University, Egypt, Khaled.hussain2000@gmail.com
- **Fast learning in the random neural network** Dr Stelios Timotheou, University of Cyprus, timotheou.stelios@ucy.ac.cy
- **A multimedia information system for video content extraction** Prof Adnan Yazici, Middle East Technical University, yazici@metu.edu.tr

#### 13.00 | LUNCH

#### 14.00 | SYSTEM & NETWORK PERFORMANCE III

Chair: Prof Ugur Halici, Middle East Technical University

- **Diffusion of opinion in social networks: structure, dynamics and games** Moez Draief, Huawei Paris Research Lab and Imperial College London
- **Macroscopic analysis of huge traces of parallel/distributed applications** Jean-Marc Vincent, University of Grenoble, Jean-Marc.Vincent@imag.fr
- **Finite two-layered queueing systems** Efrat Perel, Tel Aviv University (with U. Yechiali)

## SPEAKERS AND GUESTS PARTICIPATE FROM THE FOLLOWING COUNTRIES

Belgium, France, Egypt, Germany, Greece, Hungary, Italy, Israel, Poland, Sweden, Turkey, UK and the USA

### OTHER GUEST ATTENDEES

**Dr Omer H. Abdelrahman** Imperial College **Dr David Angeli** Imperial College **Prof Tulin Atmaca** INT-Evry, France **Mme Chantal Bancelhon** **Mrs Judy Buzen** **Prof Hande Caglayan** Bogazici Univ. Istanbul **Prof Maria-Carla Calzarossa** University of Pavia, Italy **RP Jean-Claude Cazin** France **Prof. Wojciech Cellary** Poznan Univ. of Economics, Poland **Prof Ali Dogramaci** President Bilkent Foundation, Turkey **Prof Veronique Donzeau-Gouge** Conservatoire National des Arts et Metiers, Paris **Prof Pier-Luigi Dragotti** Imperial College **Mme Martine Fayolle** France **Dr Avgoustinos Filippoupolitis** University of Greenwich **Dr Frederic Francois** Imperial College **Dr Gokce Gorbil** Imperial College **Prof Polat Gulkan** Cankaya Univ., Ankara **Mrs Basia Kaczmarowska** **Hamilton & Mr Ian Hamilton** **Prof Andrew Holmes** Imperial College **Prof Genevieve Jomier** Univ. Paris-Dauphine **Prof Frank Kelly** FRS Cambridge University **Dr Francois Kepes** Fellow NATF, CNRS and Genopole, Evry, France **Dr T.K. Kim** Imperial College **Mme Raymonde Kurinckx** LIP6, Univ. Paris VI **Dr Alain Kurinckx** Thales **Dr Rakesh Kushwaha** CTO & Founder mFormation, USA **Prof Jacques Labetoulle** EURECOM, Sophia Antipolis, France **Dr Ricardo Lent** University of Houston, USA **Dr Georgios Loukas** University of Greenwich, UK **Mme Julie Lousberg** Univ. of Liege, Belgium **Prof Danilo Mandic** Imperial College **Prof Raymond Marie** IRISA, Univ. of Rennes **Dr Edith Ngai** University of Uppsala, Sweden **Dr Christos Papavassiliou** Imperial College **Prof Thomas Parisini** Imperial College **Dr Ferhan Pekergin**, LIPN, University of Paris Nord **Dr Clio Ribbens MD** Liege University Hospital **Mrs Neeta Sahni** USA **Dr Georgia Sakellari** Middlesex University, London **Dr Valérie Schaffer** CNRS, Paris **Ms Ilana Segall & Prof Adrian Segall** Technion and Univ. of Bar Ilan, Israel **Mrs Anastasia Stafylopatis & Prof Andreas Stafylopatis** Dept. of EECS, National Tech. Univ. Athens, Greece **Prof Goran Strbac** Imperial College **Ms Antonia Szigeti** Imperial College **Signora Anna-Laura Tiberio & Prof. Paolo Tiberio** Em. Dean of Engineering, Universita' of Modena **Prof Salvatore Tucci** Head of Informatics Dept., Univ. Roma-Tor-Vergata, Italy **Prof Eric Yeatman** FEng Imperial College **Mrs Yaela Yechiali & Prof Uri Yechiali** Univ. of Tel-Aviv, Israel

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Professor of Mathematics  
Ottoman Naval  
Engineering College

