



Technical Program

Welcome Reception Sunday, September 18th at 18:00 (The Garden Room, Rector's House)

Monday, September 19		Room: Dennis Gabor Rm, Rm 611, EEE Building
08.30 – 09.00	Registration and Coffee	
09.00 – 09.10	Welcome and Opening Remarks	
09.10 – 10.50	Keynotes Chair: Erol Gelenbe	
	Keynote I – Placing Applications in Large-scale Distributed and Heterogeneous Environments <i>Valeria Cardellini, University of Rome Tor-Vergata, Italy</i>	
	Keynote II – Effectiveness: A New Metric in Performance Evaluation <i>Gerardo Rubino, INRIA, France</i>	
10.50 – 11.15	Coffee Break	
11.15– 12.30	Optimising the Cloud I Chair: Nihal Pekergin	
	A Better Model for Job Redundancy: Decoupling Server Slowdown and Job Size <i>Kristen Gardner, Mor Harchol-Balter and Alan Scheller-Wolf</i>	
	Exact Analysis of Energy-Aware Multiserver Queueing Systems with Setup Times <i>Vincent Maccio and Douglas Down</i>	
12.30– 13.30	Optimal Provision of Multiple Service Types <i>Paul Ezhilchelvan and Isi Mitrani</i>	
	Lunch ☺	
13.30– 14.45	Exploiting Big Data Chair: Omer H. Abdelrahman	
	Picky: Efficient and Reproducible Sharing of Large Datasets using Merkle-Trees <i>Daniel Hintze and Andrew Rice</i>	
	An Uncertainty-Aware Approach to Optimal Configuration of Stream Processing Systems <i>Pooyan Jamshidi and Giuliano Casale</i>	
	Parallel Graph Processing on Modern Multi-Core Servers: New Findings and Remaining Challenges <i>Assaf Eisenman, Lucy Cherkasova, Guilherme Magalhaes, Qiong Cai and Sachin Katti</i>	

14.45 – 16.00	Performance of Storage Systems I Chair: Darrell Long
	Performance Evaluation of a Tape Library System <i>Ilias Iliadis, Yusik Kim, Slavisa Sarafijanovic and Vinodh Venkatesan</i>
	Stochastic Modeling of Hybrid Cache Systems <i>Gaoying Ju, Yongkun Li, Yinlong Xu, Jiqiang Chen and John C. S. Lui</i>
	Exploiting Replication for Energy Efficiency of Heterogeneous Storage Systems <i>Everett Rush and Nihat Altiparmak</i>
16.00 – 16.15	Coffee Break
16.15 – 17.55	Energy Consumption Chair: Ricardo Lent
	Modeling the Energy-Time Performance of MIC Architecture System <i>Lavanya Ramapantulu, Thy Dao, Dumitrel Loghin, Nam Thoai and Yong Meng</i>
	ALUPower: Data Dependent Power Consumption in GPUs <i>Jan Lucas and Ben Juurlink</i>
	Experimental Calibration and Validation of a Speed Scaling Simulator <i>Carey Williamson and Arsham Skrenes</i>
18.30	Static Program Analysis for Identifying Energy Bugs in Graphics-Intensive Mobile Apps <i>Chang Hwan Peter Kim, Daniel Kroening and Marta Kwiatkowska</i>
	Conference Dinner (Polish Club - 55 Prince's Gate, Exhibition Road, London SW7 2PG)

08.30 – 09.00	Registration
09.00 – 9.50	Keynote Chair: Gerardo Rubino
	Keynote III – Reducing the Wag in the Tail by Sharding and Replication <i>Peter Harrison, Imperial College London, UK</i>
9.50– 11.30	Stochastic Models Chair: Gerardo Rubino
	Performance Modeling of Virtual Switching Systems <i>Guillaume Artero Gallardo, Bruno Baynat and Thomas Begin</i>
	Evacuee Flow Optimisation Using G-network with Multiple Classes of Positive Customers <i>Huibo Bi</i>
	Modeling Energy Packets Networks in the Presence of Failures <i>Jean-Michel Fourneau, Andrea Marin and Simonetta Balsamo</i>
	A Diffusion Model for Energy Harvesting Sensor Nodes <i>Omer H. Abdelrahman and Erol Gelenbe</i>
11.30 – 11.45	Coffee Break
11.45 – 12.35	Performance Analysis Automation Chair: Peter Harrison
	Performance Model Derivation of Operational Systems Through Log Analysis <i>Mahmoud Awad and Daniel Menasce</i>
	Pilot: A Framework that Understands How to Do Performance Benchmarks The Right Way <i>Yan Li, Ethan Miller, Darell Long and Yash Gupta</i>
12:35 – 13:35	Lunch, Rm 403a
13.35 – 15.15	Telecommunication Networks Chair: Jean-Michel Fourneau
	QoS-Aware CAPEX Minimization in Urban Off-Grid Radio Access Networks <i>Gianluca Rizzo and Marco Ajmone Marsan</i>
	Vertical Integration of CDN and Network Operator: Model and Analysis <i>Patrick Maillé, Gwendal Simon and Bruno Tuffin</i>
	Cloud-based Spectrum Sharing in Virtual Wireless Networks <i>Fatemeh Shirzad and Majid Ghaderi</i>
	Geographic Routing in Extreme-Scale Highly-Dynamic Mobile Ad-Hoc Networks <i>Ben Newton, Jay Aikat and Kevin Jeffay</i>
15.15 – 15.30	Coffee Break
15.30 – 16.45	Performance of Storage Systems II Chair: Valeria Cardellini
	RESAR: Reliable Storage at Exabyte Scale <i>Thomas Schwarz, Ahmed Amer, Thomas Kroeger, Ethan Miller, Darell Long and Jehan-Francois Paris</i>
	I/O Scheduling Schemes for Better I/O Proportionality on Flash-based SSDs <i>Jaeho Kim, Eunjae Lee and Sam H. Noh</i>
	An Empirical Evaluation of Enterprise and SATA-based Transactional Solid-State Drives <i>Yongseok Son, Hara Kang, Jinyong Ha, Jongseong Lee, Hyuck Han, Hyungsoo Jung and Heon Young Yeom</i>

Workload and Program Analysis

Chair: George Riley

16.45 – 18.00

Diplomat: Mapping of Multi-Kernel Applications Using A Static Dataflow Abstraction

Bruno Bodin, Luigi Nardi, Paul Kelly and Michael O'Boyle

Prospects for Shaping User-Centric Mobile Application Workloads to Benefit the Cloud

Maciej Swiech, Huaqian Cai, Peter Dinda and Gang Huang

Configurable and Efficient Memory Access Tracing via Selective Expression-based x86 Binary Instrumentation

Simone Economo, Davide Cingolani, Alessandro Pellegrini and Francesco Quaglia

08.30 – 09.00	Registration	
9.00 – 10.40	Optimising the Cloud II Room: Rm 509a, EEE Building Chair: Ricardo Lent	System and Network Performance Room: Dennis Gabor Rm, Rm 611, EEE Building Chair: Marco Ajmone Marsan
	Robust Server Consolidation: Coping with Peak Demand Underestimation <i>Diarmuid Grimes, Deepak Mehta, Barry O'Sullivan, Robert Birke, Lydia Chen, Thomas Scherer and Ignacio Castineiras</i>	Queueing Analysis of Software Defined Network with Realistic OpenFlow-based Switch Model <i>Yuki Goto, Hiroyuki Masuyama, Bryan Ng, Winston Seah and Yutaka Takahashi</i>
	A Model Predictive Controller for Contention-Aware Resource Allocation in Virtualized Data Centers <i>Mohammadreza Hoseinyfarahabady, Young Choon Lee, Albert Zomaya, Zahir Tari and Andy Song</i>	Autoscaling Effects in Speed Scaling Systems <i>Maryam Elahi and Carey Williamson</i>
	Optimizing Secure SDN-enabled Inter-Data Centre Overlay Networks through Cognitive Routing <i>Frederic Francois and Erol Gelenbe</i>	Achieving Efficiency without Sacrificing Model Accuracy: Network Calculus on Compact Domains <i>Kai Lampka, Steffen Bondorf and Jens Schmitt</i>
	Energy Efficient Policies for Upstream Content Server Selection <i>Sachin Sahane and Ricardo Lent</i>	Bounding Aggregations on Phase-type Arrivals for Performance Analysis of Clouds <i>Farah Ait Salaht and Hind Castel</i>
10.40 – 11.10	Coffee Break	
11.10 – 12.30	Wireless Communications Room: Rm 509a EEE Building Chair: Carey Williamson	Markov Processes Room: Dennis Gabor Rm, Rm 611, EEE Building Chair: Andrea Marin
	Is Multipath TCP (MPTCP) Beneficial for Video Streaming over DASH? <i>Cyriac James, Emir Halepovic, Mea Wang, Rittwik Jana, N K Shankaranarayanan</i>	Performance Evaluation of Fischer's Protocol through Steady-state Analysis of Markov Regenerative Processes <i>Stefano Martina, Marco Paolieri, Tommaso Papini and Enrico Vicario</i>
	Parallel HTTP for Video Streaming in Wireless Networks <i>Mohsen Ansari and Majid Ghaderi</i>	Product-forms for Probabilistic Input/Output Automata <i>Filippo Cavallin, Andrea Marin and Sabina Rossi</i>
	Optimal Cell Assignment Algorithms for Pico-Cell Networks <i>Bart Post and Sem Borst</i>	Efficient Timeout Synthesis in Fixed-Delay CTMC Using Policy Iteration <i>Lubos Korenciak, Antonin Kucera and Vojtech Rehak</i>
Hello Packet Interval Effects on the Overall Network Performance of a Wireless Network after Next (WNaN) Radio Network <i>Elizabeth Serena Bentley, Joseph Suprenant, Stephen Reichhart</i>	A Markov Reward Model Based Greedy Heuristic for the Virtual Network Embedding Problem <i>Francesco Bianchi and Francesco Lo Presti</i>	

Wednesday, September 21 (continued)

12.30 – 13.30	Lunch, Rm 403a	
13.30 – 14.50	Reliability and Verification Room: Rm 509a EEE Building Chair: Enrico Vicario	Storage III Room: Dennis Gabor Rm, Rm 611, EEE Building Chair: Darrel Long
	A Platform for Run-time Health Verification of Elastic Cyber-physical Systems <i>Daniel Moldovan and Hong-Linh Truong</i>	LayerMover: Storage Migration of Virtual Machine across Data Centers Based on Three-layer Image Structure <i>Fei Zhang, Xiaoming Fu and Ramin Yahtapour</i>
	Energy storage in Smart Homes: Grid-convenience versus self-use and survivability <i>Jannik Hüls and Anne Remke</i>	Write Amplification with Write Skew <i>Yue Yang and Jianwen Zhu</i>
	Towards Systemic Risk Aware Engineering of Large-Scale Networks: Complex Systems Perspective <i>Vladimir Marbukh</i> Towards a Scalable Test Solution for the Analysis of Interconnect Shorts in on-Chip Networks <i>Biswajit Bhowmik, Jatindra Kumar Deka and Santosh Biswas</i>	Bulk IO Storage Management for Big Data Applications <i>Pratik Mishra, Mayank Mishra and Arun Somani</i> RAIDX: RAID without Striping <i>Andras Fekete and Elizabeth Varki</i>
14.50 – 15.10	Coffee Break	
15.10 – 16.10	Data Management Room: Rm 509a, EEE Building Chair: Frederic Francois	Architectures Room: Dennis Gabor Rm, Rm 611, EEE Building Chair: George Riley
	Efficient Routing for Cost Effective Scale-out Data Architectures <i>Ashwin Narayan, Vuk Markovic, Natalia Postawa, Anna King, Alejandro Morales, K. Ashwin Kumar and Petros Efstathopoulos</i>	Behavior-Aware Integrated CPU-GPU Power Management For Mobile Games <i>Zhinan Cheng, Xi Li, Beilei Sun, Jiachen Song, Chao Wang and Xuehai Zhou</i>
	Efficient Memory Occupancy Models for In-Memory Databases <i>Karsten Molka and Giuliano Casale</i> Understanding the Energy, Performance, and Programming Effort Trade-offs of Android Persistence Frameworks <i>Jing Pu, Zheng Song and Eli Tilevich</i>	Designing and Enabling Simulation of Real-World GPU Network Applications with ns-3 and DCE <i>Jared Ivey, Brian Swenson, George Riley and Margaret Loper</i> Characterizing Performance and Power towards Efficient Synchronization of GPU Kernels <i>Islam Harb and Wu-Chun Feng</i>

16.10 – 17.30	Ad-hoc and Sensor Networks	Memory
	Room: Rm 509a, EEE Building Chair: Omer H. Abdelrahman	Room: Dennis Gabor Rm, Rm 611, EEE Building Chair: Nihal Pekergin
	Data Modelling with Gaussian Process in Sensor Networks for Urban Environmental Monitoring <i>Xiuming Liu, Teng Xi and Edith Ngai</i>	DIODE: Dynamic Inline-Offline DEduplication Providing Efficient I/O Performance and Space-saving for Primary Storage Systems <i>Yan Tang, Jianwei Yin, Shuiguang Deng, Kexiong Dong and Zhaohui Wu</i>
	TerrainLOS: An Outdoor Propagation Model for Realistic Sensor Network Simulation <i>Sam Mansfield, Kerry Veenstra and Katia Obraczka</i>	Improve Restore Speed in Deduplication Systems Using Segregated Cache <i>Wenjie Liu, Ping Huang, Tao Lu, Xubin He, Hua Wang and Ke Zhou</i>
Cooperation Stimulation and Security in Wireless Ad Hoc Networks - A Power-Efficient Bayesian Game Approach <i>Jiexin Zhang, Xiaoxue Liu and Peidong Zhu</i>	An Experimental Study on the Effect of Asymmetric Memory Latency of New Memory on Application Performance <i>J. Hyun Kim, Young Je Moon and Sam H. Noh</i>	
Dynamic clustering algorithm for tracking targets with high and variable celerity (ATHVC) <i>Mohamed Toumi, Abderrahim Maizate, Ouzzif Mohammed and Salah Mohammed Saïd</i>		
17.30	Closing Remarks	