

# ICSE 2012

The Twenty-Second International Conference on Systems  
Engineering



## PROGRAMME

11-13 September 2012

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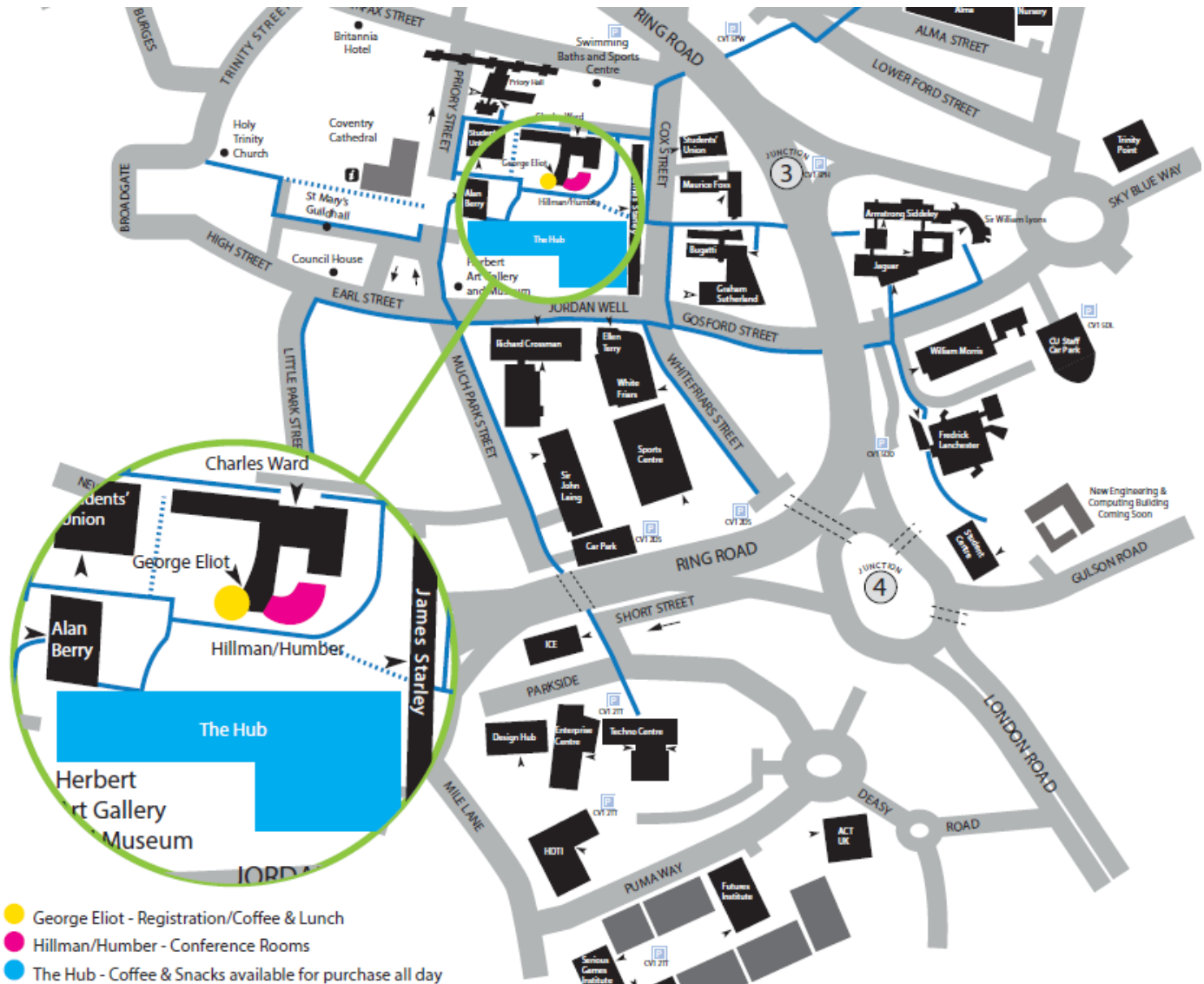
Website: [conference.coventry.ac.uk/icse2012](http://conference.coventry.ac.uk/icse2012)

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## Location

The ICSE2012 conference will take place in the George Eliot Building, Coventry University, Coventry, UK. The entrance to the Hillman/Humber lecture theatres are highlighted in pink on the map below



- Plenary sessions take place in the Humber lecture theatre.
- Even numbered sessions are in the Hillman lecture theatre
- Odd numbered sessions are in the Humber lecture theatre

**ICSE 2012 Programme** – *At a Glance*  
11<sup>th</sup> – 13<sup>th</sup> September 2012

<b>DAY 1 - Tuesday</b>	
09:00 - 10:45	Registration
10:45 - 11:15	Opening Ceremony
11:15 - 12:00	Plenary Talk 1 - Prof Roberto Guidorzi
12:00 - 12:40	Photo Session
12:40 - 14:00	Lunch
14:00 - 15:30	Parallel Sessions
	TA1: Robotics                      TA2: Computer Networks
15:30 - 16:00	Coffee Break
16:00 - 17:10	Parallel Sessions
	TA3: Control Applications 1                      TA4: Computer Network Applications
17:30 - 18:15	Special Lecture

<b>DAY 2 - Wednesday</b>	
09:30 - 10:15	Plenary Talk 2
10:15 - 10:45	Coffee Break
10:45 - 12:15	Parallel Sessions
	WM1: Automotive Control 1                      WM2: Control Applications 2
12:15 - 14:00	Lunch
14:00 - 14:45	Plenary Talk 3 - Dr Matthew Hancock
14:45 - 15:15	Coffee Break
15:15 - 16:25	Parallel Sessions
	WA1: Automotive Control 2                      WA2: Modelling and Simulation
18:30 - 22:00	Conference Dinner

<b>DAY 3 - Thursday</b>	
9:30 - 10:40	Parallel Sessions
	THM1: Operational Research                      THM2: Automotive Modelling
10:40 - 11:10	Coffee Break
11:10 - 12:20	Parallel Sessions
	THM3: System Identification                      THM4: Control Applications 3
12:20 - 12:40	Conference Close
12:40 - 15:00	Extended Lunch & Farewell Party

**ICSE 2012 - DAY 1 Tuesday 11/09/2012**

09:00 - 10:45	<b>Registration</b>	
10:45 - 11:15	<b>Opening Ceremony</b>	
11:15 - 12:00	<b>Plenary Session 1 – Prof Roberto Guidorzi - Errors-in-Variables Estimation and Filtering</b>	
12:00 - 12:40	<b>Photo Session</b>	
12:40 - 14:00	<b>Lunch</b>	
Parallel Sessions 14:00 - 15:30	<b>TA1: Robotics</b>	
	Design and Implementation of a Planar 3-DOF Parallel Micromanipulator	Jeong Jae Lee, YongHo Jeon, Moon Gu Lee
	Degree Constrained Triangulation	Roshan Gyawali, Laxmi Gewali, Henry Selvaraj
	Dynamics and Control of Nonholonomic Wheeled Mobile Robots	Yawo H. Amengonu, Yogendra P. Kakad
	Modelling, Identification and Control of a Continuous Stirred Tank Reactor - Preliminary Study	T. Larkowski, S. M. Ahmad, K. J. Burnham
	<b>TA2: Computer Networks</b>	
	Gaussian Process Regression as a Predictive Model for Quality-of-Service in Web Service Systems	Jakub M. Tomczak, Jerzy Swiatek, Krzysztof Latawiec
	A Bottom-Up Heuristic for CFSA Problem in WAN	Roza Goscien, Wojciech Kmiecik, Przemyslaw Ryba, Iwona Pzoniak-Koszalka, Andrzej Kasprzak
	Distributed Rate Control and Capacity Allocation - Towards Self-Managed Virtual Networks	Maciej Drwal, Dariusz Gasior
	Linear Capacity and Approximate Algorithms for Multicommodity Flow Assignment Problem in Computer Networks	Abdulhakim F. Zantuti
15:30 - 16:00	<b>Coffee Break</b>	
Parallel Sessions 16:00 - 17:10	<b>TA3: Control Applications 1</b>	
	Self-Tuning PID-I Controller with a New Algorithm of Tuning of Test Signal	A. Alexandrov, M. Palenov
	Design of a Supervisor for a Fault Tolerant System of Reduced Order Observers Built to Compensate for Sensor Faults	Benjamin Walker, Yogendra Kakad, Bharat Joshi
	On the Error-Quaternion, Quaternion-Difference, and Control Effort of Quaternion Based Attitude Control Laws	Douglas R. Isenberg
	<b>TA4: Computer Network Applications</b>	
	Terminology-Based Requirements Engineering: Semantic Structures as Knowledge Base	Susanne Arndt (M.A.)
	Unattended Ground Sensor Resource Allocation Using A Fuzzy Game	Stephen C. Stubberud, Kathleen A. Kramer
Implementation of Digital Museum Using CMS and Gallery Tools	Hiroyuki Kawano	
17:30 - 18:15	<b>Special Lecture</b>	

**ICSE 2012 - DAY 2 Wednesday 12/09/2012**

09:30 - 10:15	<b>Plenary Session 2</b>	
10:15 - 10:45	<b>Coffee Break</b>	
Parallel Sessions 10:45 - 12:15	<b>WM1: Automotive Control 1</b>	
	Brake-Force Distribution Principles for Vehicles with One Axle Regenerative Braking Capability	S. A. Oleksowicz, K. J. Burnham
	Brake Pedal Reaction Force Generation in Hybrid and Electric Vehicles - Approach to Modelling and Control of Electro-Hydraulic Braking Unit	Mariusz Ruta, Selim Olelsowicz, Keith J. Burnham
	Review and Simulation of Torque Vectoring Yaw Rate Control	J. A. Herring, K.J. Burnham, S. Oleksowicz
	Model Complexity Reduction of a DC-DC Buck-Boost Converter	O. Maganga, T. Larkowski, K. J. Burnham
	<b>WM2: Control Applications 2</b>	
	An Approach to Skill Assessment of Tennis Player	Krzysztof Brzostowski, Jaroslaw Drapala, Piotr Klukowski, Adam Stepien, Pawel Swiatek
	Energy Efficiency in Buildings - Impact of Building Automation, Controls and Building Management	Pawel Kret
	Estimation of Integration Requirements for Speckle Reduction in Range Finding	J. C. Whitehouse
	Distributed Traffic Flow Optimisation and Control for Intelligent Transportation Systems	Pawel Jarworski, Tim Edwards, Keith Burnham, Olivier Haas
12:15 - 14:00	<b>Lunch</b>	
14:00 - 14:45	<b>Plenary Session 3 - Dr Matthew Hancock - Challenges of Hybrid Vehicle Development</b>	
14:45 - 15:15	<b>Coffee Break</b>	
Parallel Sessions 15:15 - 16:25	<b>WA1: Automotive Control 2</b>	
	Dual Battery Control Strategy for Use with 12V Power Supply System	K. Slosarczyk, F. Lages, J. Mikos, S. Pickering
	Automated Testing of a Vehicle Instrument Cluster	S. Barnes, A. Hussain, A. Mouzakitis
	Evaluation of a MEM-Based Unit for Structural Health Monitoring: Results on a Medieval Tower	Roberto Guidorzi, Roberto Diversi, Loris Vincenzi, Vittorio Simioli
	<b>WA2: Modelling and Simulation</b>	
	A Dynamic System Matching Technique - A Simulation Study	Peter A. Stubberud, Stephen C. Stubberud, Allen R. Stubberud
	Modelling and Identification of a Continuous Stirred Tank Reactor Exhibiting Output Multiplicity	T. Larkowski, L. Koszalka, K. J. Burnham
	Towards Formulating a Business Process Simulation Model for a Brewery Production System: Preliminary steps	Z. Shen, K. J. Burnham, L. Smalov
18:30 - 22:00	<b>Conference Dinner</b>	

**ICSE 2012 - DAY 3 Thursday 13/09/2012**

Parallel Sessions 9:30 - 10:40	<b>THM1: Operational Research</b>	
	Inventory Modelling and Management: Considerations of a Predictive Approach	Joanna E. Orzechowska, Andrzej Bartoszewicz, Keith Burnham, Dobrila Petrovic
	An Approach to Utility Service Provision Modelling and Optimisation	Anna Strzelecka, Piotr Skworcow, Bogumil Ulanicki, Tomasz Janus
	Algorithms for Solving Frequency Assignment Problem in Wireless Networks	Radoslaw Jozefowicz, Wojciech Kmiecik, Iwona Pozniak-Koszalka, Andrzej Kasprzak
	<b>THM2: Automotive Modelling</b>	
	Model Order Reduction for Electric Machines: A Review	Olukaleke A. Agbaje, Keith J. Burnham
	Reduced Order, High-Fidelity Modelling of Supercapacitors	Toheed Aizad, Keith J. Burnham
	Battery State of Charge Estimation, Battery Management System for Hybrid Electric Vehicle	A. D. El-ladan, S. Oleksowicz, K. J. Burnham
10:40 - 11:10	<b>Coffee Break</b>	
Parallel Sessions 11:10 - 12:20	<b>THM3: System Identification</b>	
	A Comparison of Methods for Modelling a Mechanical System with Friction	Mateusz Budnik, Keith J Burnham
	Comparison of Continuous-Time Vehicle Model Estimators as Candidates for Suspension System Fault Detection	V. E. Ersanilli, K. J. Burnham
	Clutch Pedal Modelling for Optimising Design Parameters	A Fofana, K Vithange, C Woolley, K Burnham
	<b>THM4: Control Applications 3</b>	
	Development and Implementation of Real-Time Model Predictive Control for a Three-Tank Control Problem Using a dSPACE Multi-Processor System	D. Buchner, P. Skworcow
	Neural Network Training Using a Constrained Sequential Nonlinear Estimator	Stephen C. Stubberud, Kathleen A. Kramer, Allen R. Stubberud
Tracking of exercise plan execution for wearable system supporting sport training	Krzysztof Brzostowski, Krzysztof Domagala, Jerzy Swiatek	
12:20 - 12:40	<b>Conference Close</b>	
12:40 - 15:00	<b>Extended Lunch &amp; Farewell Party</b>	