

Thomas Edward Gorochowski M.Eng. M.Res.

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| ADDRESS | Bristol Centre for Complexity Sciences, Department of Engineering Mathematics, University of Bristol, Bristol, BS8 1UB, UK | TELEPHONE +44 (0) 791 781 8078 E-MAIL tgorochowski@me.com WEBSITE www.chofski.co.uk |
| EDUCATION | Ph.D. Complexity Sciences <i>Bristol Centre for Complexity Sciences, University of Bristol, Bristol, BS8 1UB</i> • Dynamics of complex evolving networks: analysis, control and applications. <i>Supervisors: Prof. Mario di Bernardo, Prof. Claire S. Grierson</i> | 2009 – Present |
| | M.Res. Complexity Sciences (Distinction) <i>Bristol Centre for Complexity Sciences, University of Bristol, Bristol, BS8 1UB</i> • Bacto-Builders – Micro-scale construction by bacteria, a modelling perspective. <i>Supervisors: Prof. Mario di Bernardo, Prof. Claire S. Grierson</i> • Cross-frequency coupling of neuronal oscillations during cognition. <i>Supervisors: Dr. Rafal Bogacz, Dr. Matt W. Jones</i> | 2007 – 2009 |
| | M.Eng. Computer Science (1st Class with Honours) <i>Department of Computer Science, University of Warwick, Coventry, CV4 7AL</i> • 4th Year Group Project: Vidi – Visualisation of fluidic systems using OpenGL. <i>Supervisors: Dr. Alexander Tiskin, Prof. Robert M. Kerr</i> • 3rd Year Dissertation: GAVToolkit – Graph algorithm visualisation. <i>Supervisor: Prof. Leslie A. Goldberg</i> | 2000 – 2004 |
| EMPLOYMENT HISTORY | Accenture Ltd., London, UK. Working as a consultant in the Global Technology Consulting (GTC) group, I was specifically aligned to the Accenture Information Management Services (AIMS) domain. My responsibilities included all aspects of the project delivery life-cycle covering: project management (small teams of 5–10 people), requirements gathering, data cleansing (Informatica, DataStage), front-end reporting (Cognos, Business Objects), data modelling (ERWin, Oracle Designer, Relational, Multi-Dimensional) and analytics (Siebel Analytics). Clients spanned many sectors including government, financial, media and entertainment, pharmaceutical and engineering. | Oct 2004 – Sept 2007 |
| | Honeywell, Yeovil, Somerset, UK. Financial support during my undergraduate degree was provided by Honeywell in return for working summer placements at their Yeovil site. This was based within their information systems group and involved the development of new applications and processes to allow for better understanding of their site-wide manufacturing data. | Jul 2001 – Sept 2003 |
| PUBLICATIONS | <ol style="list-style-type: none">1. T.E. Gorochowski, M. di Bernardo, and C.S. Grierson. Evolving dynamical networks: a formalism for describing complex systems. <i>Complexity</i>, 2011 (in press)2. P. DeLellis, M. di Bernardo, T.E. Gorochowski, and G. Russo. Synchronization and Control of Complex Networks via Contraction, Adaptation and Evolution. <i>IEEE Circuits and Systems Magazine: Special Issue on Complex Networks</i> 10:3, pp. 64-82, 2010. 10.1109/MCAS.2010.9378843. T.E. Gorochowski, M. di Bernardo, and C.S. Grierson. A dynamical approach to the evolution of complex networks. <i>Proceedings of the 19th International Symposium on Mathematical Theory of Networks and Systems</i>, pp. 1083-1087, 2010. ISBN: 978-963-311-370-74. T.E. Gorochowski, M. di Bernardo, and C.S. Grierson. Evolving enhanced topologies for the synchronization of dynamical complex networks. <i>Physical Review E</i> 81, p. 056212, 2010. 10.1103/PhysRevE.81.0562125. T.E. Gorochowski, M. di Bernardo, and C.S. Grierson. Using aging to visually uncover evolutionary processes on networks. (under review) | |

6. T.E. Goroehowski, A. Matyjaszkiewicz, T. Todd, N. Oak, K. Kowalska, S. Reid, N.J. Savery, C.S. Grierson, and M. di Bernardo. BSim: an agent-based tool for modeling bacterial populations in systems and synthetic biology. (in preparation)
7. T.E. Goroehowski, M. di Bernardo, and C.S. Grierson. Role of motif clustering in biological and engineered networks. (in preparation)

AWARDS AND PRIZES

- **BioBricks Foundation SB5.0 Young Researcher Travel Award** (\$750)
SB5.0: the Fifth International Meeting on Synthetic Biology, 2011
- **2nd Runner Up Overall, Best Food or Energy Project and Gold Medal** (BCCS-Bristol Team)
International Genetically Engineered Machines Competition, 2010
- **Best Poster** (Computational Methods and Tools Session)
11th International Conference on Systems Biology, 2010
- **Best Model Prize and Gold Medal** (BCCS-Bristol Team)
International Genetically Engineered Machines Competition, 2009
- **Best Model Prize and Bronze Medal** (BCCS-Bristol Team)
International Genetically Engineered Machines Competition, 2008

PRESENTATIONS

- BSim: an agent-based tool for modeling synthetic bacterial populations (Poster) **Jun 2011**
SB5.0: Fifth International Meeting on Synthetic Biology, Stanford University, California, USA
- Evolving dynamical networks for synchronization: analysis and emergence (Talk) **May 2011**
SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, USA
- Evolving dynamical networks for synchronisation (Talk) **Apr 2011**
British Applied Mathematics Colloquium, University of Birmingham, UK
- Using Ageing to Visually Uncover Evolutionary Processes on Networks (Poster) **Nov 2010**
Challenges of Visualising Biological Data Workshop, The Grand Thistle, Bristol, UK
- NetEvo - Computational Evolution of Dynamical Complex Networks (Poster) **Oct 2010**
11th International Conference on Systems Biology, Edinburgh International Conference Centre, UK
- NetEvo - Computational Evolution of Dynamical Complex Networks (Poster) **Jul 2010**
RoSBNet Synthetic Biology Workshop, University of Oxford, UK
- A Dynamical Approach to the Evolution of Complex Networks (Talk) **Jul 2010**
19th International Symposium on Mathematical Theory of Networks and Systems, Eotvos Lorand University, Budapest, Hungary
- NetEvo - Computational Evolution of Dynamical Complex Networks (Poster) **Jul 2010**
Statworks – Statistical modelling and inference for networks, University of Bristol, UK
- Computational Evolution of Dynamical Complex Networks (Talk) **Oct 2009**
Engineering Principles in Biological Systems, Wellcome Trust Conference Centre, Hinxton, UK
- NetEvo - Computational Evolution of Dynamical Complex Networks (Poster) **Sept 2009**
European Conference on Complex Systems, University of Warwick, UK
- Dynamics of Complex Evolving Networks (Talk) **Jun 2009**
NetSci, Istituto Veneto Scienze Lettere ed Arti, Venice, Italy
- Bacto-Builders (Talk) **Jun 2009**
Regional Meeting on Mathematics, Computation and Biology, University of Bristol, UK
- Bacto-Builders (Talk) **Nov 2008**
iGEM Jamboree, MIT, USA
- Bacto-Builders Modelling (Talk) **Sept 2008**
BICS Conference – Emergence in Complex Systems, University of Bath, UK
- BCCS-Bristol iGEM Ideas (Talk) **Jul 2008**
iGEM 2008 – UK Meeting, University of Edinburgh, UK

- RESEARCH VISITS
- **SINCRO Group** **14 – 21 Mar 2010**
Department of Computer Science and Systems, University of Naples Federico II, Italy
- TEACHING
- **EMAT10921 Computer Programming**, 2009 – 2011 (34 hours)
Assisted with lab sessions covering the basics of C based programming.
 - **EMAT202921 Additional Computer Programming**, 2009 – 2011 (31 hours)
Assisted with lab sessions covering MATLAB/Simulink and object-orientated programming.
 - **Synthetic Biology Fieldcourse**, 2010 – 2011 (6 hours)
Developed materials and ran lab session on agent-based modelling of bacterial systems.
 - **EMAT10720 Continuous Mathematics for Computer Science**, 2009 – 2010 (6 hours)
Assisted with examples classes covering probability, analysis, calculus and linear algebra.
 - **EMAT10714 Discrete Mathematics for Computer Science 1**, 2009 – 2010 (5 hours)
Assisted with classes covering topics such as number theory, sets and formal reasoning.
 - **BCCS Advanced Research Skills**, 2010 (4 hours)
Helped design course structure, presented lectures and marked assessments.
 - **CS132 Computer Organisation and Architecture**, 2003 (6 hours)
Assisted with labs covering computer hardware architecture and low-level programming.
- OTHER PROFESSIONAL ACTIVITIES
- Reviewer for IMA Journal of Applied Mathematics (2011)
 - Reviewer for American Control Conference (2010)
 - Reviewer for IEEE Conference on Decision and Control (2010)
- RESEARCH SUPPORT
- **Queen’s Computer Users Working Group**, 2010 – 2011
Representative for postgraduate students across departments in the School of Engineering on computing related matters.
 - **Predictive Life Sciences Mathematical Helpdesk**, 2009 – 2011
Act as a consultant for life science based students and members of staff providing advice on statistical analysis, mathematical modelling and computational simulation.
 - **iGEM Instructor**, 2009 – 2011
Instructor for the BCCS-Bristol iGEM team helping students get started with synthetic biology, idea generation, mathematical modelling and general administration.
- INTERESTS
- Outside of science I have a wide range of interests in fine art, design (especially relating to topography), fly-fishing, the great outdoors and racket sports. Over the years I have played badminton to a high standard captaining the 1st teams at Warwick and Bristol Universities and while there reached the last 16 of the double event at British University Games in 2001 and 2010. I have also represented my county 1st team and in the senior county restricted tournament been singles runner-up in 2002 and 2004, and doubles winner in 2004 and 2010. More recently, although not a competitive fly-fisher, I was fortunate enough to take part in the inaugural world varsities trout fly fishing competition which took place on Lough Corrib in the west of Ireland.