Christopher Steven Timperley

Ph.D. Candidate at the University of York
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Education

- **University of York** 2013 - 2016 (expected)
  Ph.D. Computer Science
  Advisor: Prof. Susan Stepney
  Thesis: Automatic programming, optimisation and repair of large-scale software systems
- **University of York** 2009 - 2013
  M.Eng. Computer Science with Artificial Intelligence *First Class Honours*
  Advisor: Prof. Susan Stepney
  Thesis: Reflective method matching for object-oriented programs (84%)

Industry Experience

- **Analytica Informatics** London, UK
  Co-Founder, Technical Director *February 2012 - August 2013*
  - Built a high-performance cloud-based system for analysing and reconciling financial data from multiple sources. Produced a flexible data-driven web framework that allowed the system to work with different currencies and languages, and to be extended into different industries through the use of meta-programming and an abstract rules engine.
  - Technologies used include PHP, Python, PostgreSQL, MongoDB, and Amazon EC2.
  - During this time I gained experience in providing services to clients as well as invaluable exposure to industry, meeting and consulting with a number of large organisations and companies in the UK and abroad.
- **Academic Support Office, University of York** York, UK
  Summer Intern *July 2010 - October 2010*
  - Responsible for migrating the office's existing pages into the new university-wide CMS, and for creating an online system for archiving undergraduate and postgraduate programme specification.
  - Whilst working at the university, I learnt about the day-to-day operations of a large-scale educational facility.
- **The Guild of Dark Knights (TGODK.com)** Heysham, UK
  Founder *April 2004 - February 2007*
  - When I was 13 years old I taught myself to program and soon after turning 14, I created a browser-based massively multiplayer online role playing game using PHP, MySQL, HTML, CSS and JavaScript.
  - At its peak, the game had over 30,000 players and helped to later fund my university studies through micro-transactions.
  - Over the years that I ran the game I picked up technical, business and personal skills, I learnt the fundamentals of programming, databases, design and application security, how to effectively market a start-up, and how to best manage my time.

Research Experience

- **Carnegie Mellon University** Pittsburgh, PA, USA
  Visiting researcher at Institute for Software Research *July 2015 - October 2015*
  - Visited Prof. Claire Le Goues's research group.
  - Conducted a joint research project on automated software repair via genetic programming.
  - Significantly improved efficiency and effectiveness of techniques, through both theory and experimentation; applied to bugs in large-scale real-world programs.
  - Improved documentation, usability and performance of GenProg tool.
  - Funded by a William Gibbs award.

Awards, Grants & Honors

EPSRC Doctoral Training Grant 2013-2016
William Gibbs Award (£3,000) 2015
K.M. Stott Prize for Best Qualifying Disseration (£250) 2015
British Informatics Olympiad (Merit) 2009
MCHS ICT Student of the Year 2007-2009
MCHS Crowther Prize for Progress 2008
MCHS Commitment to Study Prize 2007

Publications

1. Christopher Timperley and Susan Stepney. *Wallace: An efficient generic evolutionary framework*, *European Conference on Artificial Life*, pp. 365-372, York, UK, July 2015.

2. Christopher Timperley and Susan Stepney. *Reflective Grammatical Evolution*, *ALIFE 14*, pp. 71-78, New York, NY, USA, July 2014.

Teaching and Demonstrating

- **Evolutionary Computation (Masters Level)** Winter 2014
  Demonstrator, Guest Lecturer, Module Co-organiser
  - Gave two guest lectures on Artificial Life and Evolutionary Computation for Games AI.
  - Designed and helped to run the lab sessions.
  - Using my EC framework, Wallace, to teach the module, we were able to tackle advanced topics more quickly.
- **Introduction to Complex Systems** Winter 2014
  Demonstrator
- **Theory and Practice of Programming** 2014, 2015
  Demonstrator, Marker

Selected Open Source Projects (github.com/ChrisTimperley)

- **Push.jl** — Julia
  An efficient implementation of the Push programming language, in Julia. — *2015 - Current*
- **EvoAnalyser.py** — Python, Pandas
  A framework-independent logging and analysis tool for evolutionary computation. — *2015 - Current*
- **Wallace.jl** — Julia
  A high-performance dynamic framework for evolutionary computation. — *2014 - Current*

Extra-Curricular Activities

- Represented the university in karting on a national level in the British Universities Karting Championship for several years (in the pro category).
- President of the University of York Karting Club for 2 years; organised sessions, boosted membership numbers, coached rookie drivers, and built a new interactive website based on Rails.
- Elected as a representative of the Halifax Student College Association; planned, organised and marketed college events as part of a small team.

Skills

- **Programming:** Python, Ruby, Julia, OCaml, Haskell, PHP, C, Java, Scala, JavaScript
- **Databases:** PostgreSQL, MySQL, MongoDB, Redis, SQLite
- **Computer Science:** High Performance Computing, Machine Learning, Data Mining, Optimization, Evolutionary Computation, Artificial Intelligence, Monte Carlo Methods, Cloud Computing, Parallel Programming, Programming Languages, Data Structures
- **Technology:** Amazon EC2, MapReduce, Linux, Vim, Git, Subversion, Django, Rails, OpenGL, Pandas, Matplotlib, Numpy, SciPy, LaTeX