

## Summary

A self-motivated and hard-working candidate who is eager to learn. Able to use own initiative and work as part of a team. Proven competitive edge and goal-seeking attitude. An effective communicator with a logical mindset and the capability to work accurately under pressure.

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## Experience

- National Institute of Informatics** TOKYO, JAPAN  
**JSPS Fellow** Dec 2016 - Present  
Conducting self-proposed research into the application of formal methods to adaptive systems in order to provide safety guarantees.
- Queen's University Belfast** BELFAST, U.K.  
**Research Fellow & Work Package Leader** Jan - Dec 2016  
Design and implementation of programming model and runtime for future Exascale super-computers. This was a European Union Horizon2020 project and involved international collaboration.
- Education Scotland** GLASGOW, U.K.  
**Education Consultant** Autumn 2015  
Hired as a consultant to help develop a computing science curriculum for the broad general education phase (age 0 - 14) of the Scottish Curriculum for Excellence. Worked with governmental, industrial, educational, and academic partners.
- University of Oregon** EUGENE, OR, USA  
**Research by Furth** Autumn 2014  
Invited to continue my PhD research and learn from domain experts at the University of Oregon.
- Japanese Society for the Promotion of Science (JSPS)** AIZUWAKAMATSU, JAPAN  
**Research Fellowship** Summer 2013  
The work was a short break from my Ph.D. studies to explore parallelisation of particle dispersion modelling with OpenCL, and extending the basic model to include radioactive decay, and particle deposition.
- University of Glasgow** GLASGOW, U.K.  
**Research Assistant** Winter 2010  
Assisted with research and development projects for Professor Joseph Sventek.
- European Centre for Nuclear Research (CERN)** GENEVA, SWITZERLAND  
**Research Intern** Summer 2010  
Investigation of the scaling potential of the "address book" for the grid which was responsible for all scientific computing at CERN. We were able to improve performance by 2 orders of magnitude.
- University of Glasgow** GLASGOW, U.K.  
**Research Studentship** Summer 2009  
Was awarded funds from the Carnegie Trust for the Universities of Scotland to conduct research into hypervisor scheduling policies.
- Codeplay** EDINBURGH, U.K.  
**Compiler Developer** Summer 2008  
Responsible for porting the runtime memory analysis to the Cell processor, as well as development of a number of support tools.
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## Education

- University of Glasgow** GLASGOW, U.K.  
**PhD in Computer Science** 2011 - 2015  
Thesis Title: A Linguistic Approach to Concurrent, Distributed, and Adaptive Programming Across Heterogeneous Hardware Platforms.
- University of Glasgow** GLASGOW, U.K.  
**MSci (Hons) degree in Computer Science - First Class** 2005 - 2010
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## Honours

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| Winning team of the Honida-lab Winter Robotics Battle  | 2018 |
| Accepted to the HIPEAC ACACES Summer School  | 2016 |
| Heidelberg Forum Young Scientist 2015  | 2015 |
| Winning Team for Glasgow Health Hackathon (£20,000 prize)  | 2014 |
| Awarded best poster - University of Glasgow Ph.D. poster competition   | 2012 |
| Awarded Masters Class Prize  | 2010 |
| Nominated for the UK Science, Engineering & Technology (SET) Award for Best Information Technology Student of the Year | 2010 |
| Awarded the Spartan Engineering Project Prize  | 2009 |

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## Funding

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| Fellowship, Japanese Society for the Promotion of Science  | 2016        |
| I was awarded a fellowship to study at a Japanese University from the Japanese government. The award was made to 7 UK postdocs with a 7% success rate. The accompanying grant award was worth 2,100,00 yen over 2 years. |             |
| Fellowship, Japanese Society for the Promotion of Science  | 2013        |
| I was awarded a fellowship to study at a Japanese University from the Japanese government. The award was made to 12 UK Ph.D. students with a 10% success rate. The award was worth ~£5000 over 3 months.                 |             |
| Studentship, Carnegie Trust of the Universities of Scotland  | 2011 - 2015 |
| I was nominated for, and received, one of 12 cross-disciplinary Studentships from the Carnegie Trust of the Universities of Scotland to pursue a Ph.D. The studentship was worth ~£90k over 42 months.                   |             |
| Studentship, Carnegie Trust of the Universities of Scotland  | 2009        |
| I was nominated for, and received, a Studentship from the Carnegie Trust of the Universities of Scotland (£1400 over 8 weeks) to continue the research from my honours project.  |             |

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## Teaching

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|---|---------------------------------------|
| Lecturing   |                                       |
| Computing Science in the Classroom, Level 4   | 2013, 2014, 2015                      |
| Advanced Programming Languages - C, level 3   | 2015                                  |
| Wireless Sensor Networks, Level 4 (Guest Lecturer)  | Autumn 2011, Autumn 2012              |
| Seminars  |                                       |
| Advanced Research Readings in Computing Science, Level 5  | Spring 2014                           |
| Tutoring  |                                       |
| Java Programming, Level 2   | Autumn 2011                           |
| Python Programming, Level 1   | Autumn 2009                           |
| Lab Assistant   |                                       |
| Operating Systems, Level 3  | Spring 2010, Spring 2012, Spring 2013 |
| Networked Systems, Level 3  | Spring 2014                           |
| Advanced Programming, Level 3   | Autumn 2012                           |
| Programming Languages, Level 3  | Spring 2012                           |
| Project Supervision   |                                       |
| Msc project, Daniel Millevik, <i>Machine Learning in Heterogeneous Actor Scheduling</i>                                       | present 2017                          |
| BSc(Hons) project, Shinyi Breslin, <i>Insense Simulator</i>   | March 2014                            |
| BSc(Hons) project, Kristian Hentschel, <i>Implementing Insense with OpenCL</i>  | March 2014                            |
| BSc(Hons) project, Dmitrijs Kovalenko, <i>Insense code generation tool and porting the Insense language to 32-bit systems</i> | March 2014                            |
| BSc(Hons) project, Craig McLaughlin, <i>An Interprocedural Data Flow Analysis for Efficient Message Passing</i>               | March 2014                            |
| MSc project, Alexander Aavang, <i>Component-Based Graphical Design</i>  | September 2013                        |
| MSci project, Callum Cameron, <i>A Virtual Machine for the Insense Language</i>   | April 2013                            |
| BSc(Hons) project, Javier Lazaro Munoz, <i>Cycle Detection for GC in Embedded Systems</i>                                     | April 2013                            |
| BSc(Hons) project, Xun Zhang, <i>Scheduling Issues in the Emulation of Large Sensor Networks</i>                              | April 2013                            |

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## Invited Talks

### Self Composing Systems

GRACE Workshop on Software Engineering for Cyber-Physical-Social Systems 2017

December 2017

### Session Types and Adaptive Programming

6th Asian Workshop of Advanced Software Engineering

May 2017

### An Actor-based Programming Language for the Internet of Things

Scottish Programming Languages Seminar

February 2015

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## Publications

- [1] *Designing the Next Generation Grid Information System*, number CERN-IT-2011-004, Geneva, Jan 2011.
  - [2] C. Cameron, **P. Harvey**, and J. Sventek. A virtual machine for the insense language. In *MOBILE Wireless MiddleWARE, Operating Systems and Applications (Mobilware), 2013 International Conf on*, pages 1–10, Nov 2013.
  - [3] P. Harvey. D3.3 specifications of systems software and programming model for the ecoscale platform. techreport, Queen’s University Belfast, 2016.
  - [4] **P. Harvey**, K. Bakanov, I. Spence, and D. S. Nikolopoulos. A scalable runtime for the ecoscale heterogeneous exascale hardware platform. In *Proceedings of the 6th International Workshop on Runtime and Operating Systems for Supercomputers, ROSS ’16*, pages 7:1–7:8, New York, NY, USA, 2016. ACM.
  - [5] **P. Harvey**, A. Dearle, J. Lewis, and J. Sventek. Channel and Active Component Abstractions for WSN Programming - A Language Model with OS Support. In *SENSORNETS*, pages 35–44. SciTePress, 2012.
  - [6] **P. Harvey**, S. Hameed, and W. Vanderbauwhede. Accelerating lagrangian particle dispersion in the atmosphere with opencl across multiple platforms. In *Proceedings of the International Workshop on OpenCL 2014, IWOCCL ’14*, pages 6:1–6:8, New York, NY, USA, 2014. ACM.
  - [7] **P. Harvey**, K. Hentschel, and J. Sventek. Parallel programming in actor-based applications via opencl. In *Proc of the 16th Annual Middleware Conf, Middleware ’15*, pages 162–172, New York, NY, USA, 2015. ACM.
  - [8] **P. Harvey** and J. Sventek. Wireless sensor network simulation with xen. In *Proceedings of the 46th Annual Simulation Symposium, ANSS 13*, pages 4:1–4:8, San Diego, CA, USA, 2013. Society for Computer Simulation.
  - [9] **P. Harvey** and J. Sventek. Adaptable actors: Just what the world needs. In *Proceedings of the 9th Workshop on Programming Languages and Operating Systems, PLOS’17*, pages 22–28, New York, NY, USA, 2017. ACM.
  - [10] P. Vajrabhaya and **P. Harvey**. Guilty as charged: Index finger pointing as an emblem. *8th Conference of the International Society for Gesture Studies (to appear)*, jul 2018.
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## Skills

**Languages:** C, Java, OpenCL, Bash, Python, MSP430 Assembler, Ensemble, nesC

**Operating Systems:** Linux, Windows, Contiki, TinyOS

**Development Environments & Tools:** Eclipse, Netbeans, Visual Studio, Cooja, TOSSIM

**Natural languages:** English (*native speaker*), French (*elementary proficiency*), Japanese (*post-beginner proficiency*).

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## Professional Service

**Reviewer:** EuroPar(2016), ICPP(2016), Journal of Information Security and Applications(2015, 2016), Tiny-TOCs(2016), HiPC(2016)

**Session Chair:** Sensornets(2012)

**Panel Member:** ROSS(2016)

**Organisation Member:** ACM

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## Administration

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| Seminar Coordinator, Parallel Computing and Programming Languages<br>Queen's University Belfast                    | 2016      |
| Gong Show Organiser and Host (Student Presentation Workshop)<br>School of Computing Science, University of Glasgow | 2011-2015 |
| Postgraduate Representative<br>School of Computing Science, University of Glasgow                                  | 2012-2013 |
| Undergraduate Representative<br>School of Computing Science, University of Glasgow                                 | 2007-2009 |

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## Extra-Curricular Activities

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| Outreach  |             |
| <b>Japanese High School Intro to Computing Science</b>                                      | 2017        |
| Music   |             |
| <b>Member of the Belfast Big Band</b>   | 2016        |
| <b>Founding member of the Glasgow Golden Keys Saxophone Quartet</b>                         | 2014 - 2016 |
| <b>Member of the Swing Sensation, Capitol Big Band, and Motherfunk Band</b>                 | 2012 - 2016 |
| <b>Performed live on the Radio Scotland Hogmanay Show with the Swing Sensation Big Band</b> | 2012        |
| <b>Performed at the Edinburgh Fringe with the Swing Sensation Big Band</b>                  | 2012, 2014  |
| <b>Member of the Lauders Big Band</b>   | 2007 - 2009 |
| <b>Member of the North Ayrshire Concert Band</b>  | 2002 - 2005 |
| British Concert Band Festival, (Silver: 2002, Gold: 2003, Silver: 2004)                     |             |
| Other   |             |
| <b>I have spent time travelling through South America, South East Asia, and China</b>       | 2010 - 2011 |
| <b>Spent 1 month in Malawi, Africa as part of an Exchange visit with St. Peter's School</b> | 2004        |
| <b>Member of the Johnstone amateur drama society</b>  | 2002 - 2004 |