

Chris Seaton



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Researcher and software engineer with a proven ability to generate and follow through with his own research projects, to ship finished products to non-technical end-users, to collaborate on open-source projects, and to lead and build teams. Looking for genuinely challenging roles using systems, languages, compilers, virtual machines, parallelism, concurrency and related technologies.

Current Work

Research Manager, Oracle Labs Virtual Machine Research Group

- First developer and principle investigator on the JRuby+Truffle project.
- Implementing a very high performance Ruby interpreter using Java on the JVM using Truffle and Graal – a next generation language framework and dynamic compiler.
- Implementing a zero-overhead debugger for Ruby using dynamic deoptimisation.
- Implementing high performance C extensions for Ruby by interpreting C.
- Strong emphasis on open-source community collaboration – 3rd biggest contributor to JRuby.
- github.com/jruby/jruby/wiki/Truffle

PhD Student, University of Manchester, UK

- Thesis title “Irregular Parallelism Requires Specialisation”, supervisor Mikel Luján.
- Researching irregular parallelism, where dependencies between parallel tasks are not easy to identify statically.
- Techniques include parallel patterns, optimistic parallelism, transactional memory, race-and-repair.

Founder, Medicapps Ltd

- With two surgeons developed a novel iPhone app for burns treatment.
- Pioneered submitting the app for regulation as a medical device, becoming the first regulated medical app in the UK.
- Generated national media interest and interviewed by BBC TV, radio and a national newspaper.
- Won an NHS Innovation Awards prize of £5,000 and over £40,000 of funding from the NHS.
- Established a limited company consultancy to pass on our unique experience.
- merseyburns.com

Former Work

British Army Officer, 2007 – 2011

- Led teams of up to forty people in the UK and around the world often in very difficult situations dealing with extreme time and resource pressures.
- Coordinated medical care to an infantry battlegroup of over a thousand soldiers on operations in Afghanistan.
- Ran a recruit training troop and then was second-in-command of an officer-training unit attached to the University of Manchester.

Awards

- Winner, Excellence in Mobile Healthcare and overall winner, eHealth Awards 2013.
- Best Paper Award, MULTIPROG, 2012.
- Highly Commended, eHealth Awards, 2012.
- Excellence in Innovation, NHS North West Health Innovation Awards, 2011.
- Hele Shaw Prize, faculty prize for academic and social record, University of Bristol, 2007.

Education

- Current PhD student, University of Manchester, Advanced Processor Technologies Group.
- 2007 MEng Computer Science, University of Bristol, 1st Class and awarded the faculty prize for academic and social achievement.
- ABBB A levels, Peter Symonds College, Winchester

Publications and Presentations

- M. Grimmer, C. Seaton, T. Würthinger, H. Mössenböck. *Dynamically Composing Languages in a Modular Way: Supporting C Extensions for Dynamic Languages*. In Proceedings of the 14th International Conference on Modularity, 2015 (to appear).
- A. Wöß, C. Wirth, D. Bonetta, C. Seaton, C. Humer, and H. Mössenböck. *An object storage model for the Truffle language implementation framework*. In Proceedings of the International Conference on Principles and Practices of Programming on the Java Platform (PPPJ), 2014.
- C. Seaton. *Implementing Ruby Using Truffle and Graal*. At the European Conference on Object Oriented Programming (ECOOP) Summer School. 2014.
- C. Seaton, M. L. Van De Vanter, and M. Haupt. *Debugging at full speed*. In Proceedings of the 8th Workshop on Dynamic Languages and Applications (DYLA), 2014.
- C. Wimmer and C. Seaton. *One VM to Rule Them All*. At the JVM Language Summit. 2013.
- D. Goodman, S. Khan, C. Seaton, Y. Guskov, B. Khan, M. Luján, and I. Watson. *DFScala: High level dataflow support for Scala*. In Proceedings of the 2nd International Workshop on Data-Flow Models For Extreme Scale Computing (DFM), 2012.
- C. Seaton, D. Goodman, M. Luján, and I. Watson. *Applying dataflow and transactions to Lee routing*. In Proceedings of the 7th Workshop on Programmability Issues for Heterogeneous Multicores (MULTIPROG), 2012.
- S. S. Sofos, R. Pritchard-Jones, C. Seaton, J. Dingley, P. McArthur, and K. Shokrollahi. *Medical innovation—a starting point for plastic surgeons*. Annals of Plastic Surgery, 69(3):225–7, Sep 2012.
- C. Seaton. *A programming language where the syntax and semantics are mutable at runtime*. Master's thesis, University of Bristol, 2007.

Community Responsibilities

- Program committee member, Dynamic Languages Symposium 2014.

Other Information

- British nationality.
- UK Security Clearance holder.