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 TruffleRuby 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 high performance C extensions for Ruby by interpreting C.
- Strong emphasis on open-source community collaboration
- chrisseaton.com/rubytruffle

Former Work

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

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

- Finalist, Ruby Prize 2016.
- 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

- 2015 PhD, University of Manchester, 'Specialising Dynamic Techniques for Implementing The Ruby Programming Language', supervisor Mikel Luján.
- 2007 MEng Computer Science, University of Bristol, 1st Class and awarded the faculty prize for academic and social achievement.

Publications

- C. Seaton. **Specialising Dynamic Techniques for Implementing the Ruby Programming Language**. PhD thesis, University of Manchester, 2015.
- C. Seaton. **A programming language where the syntax and semantics are mutable at runtime**. MEng thesis, University of Bristol, 2007.
- C. Seaton. **AST Specialisation and Partial Evaluation for Easy High-Performance Metaprogramming**. In Proceedings of the 1st Workshop on Meta-Programming Techniques and Reflection (META), 2016.
- M. Grimmer, C. Seaton, R. Schatz, T. Würthinger, H. Mössenböck. **High-Performance Cross-Language Interoperability in a Multi-Language Runtime**. In Proceedings of 11th Dynamic Languages Symposium (DLS), 2015.
- B. Daloze, C. Seaton, D. Bonetta, H. Mössenböck. **Techniques and Applications for Guest-Language Safepoints**. In Proceedings of the 10th Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems Workshop (ICOOOLPS), 2015.
- M. Grimmer, R. Schatz, C. Seaton, T. Würthinger, H. Mössenböck. **Memory-safe Execution of C on a Java VM**. In Proceedings of the 10th Workshop on Programming Languages and Analysis for Security (PLAS), 2015.
- S. Marr, C. Seaton, S. Ducasse. **Zero-Overhead Metaprogramming: Reflection and Metaobject Protocols Fast and without Compromises**. In Proceedings of the 36th Conference on Programming Language Design and Implementation (PLDI), 2015.
- 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.
- 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.
- 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.
- 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.
- 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.
- J. Barnes, A. Duffy, N. Hamnett, J. McPhail, C. Seaton, K. Shokrollahi, M. I. James, P. McArthur, and R. Pritchard-Jones, **The Mersey Burns App: evolving a model of validation**, Emerg Med J, pp. emermed–2013–203416, Nov. 2014.
- 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.

Community Work

- Maintainer of The Ruby Bibliography rubybib.org
- JavaOne emerging languages program committee member, 2016
- Dynamic Languages Symposium (DLS) program committee member, 2016, 2014
- Technical reviewer, 500 Lines or Less

Other Information

- British nationality.
- UK security clearance.