CHRIS SEATON

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chrisseaton.com
github.com/chrisseaton
Cheshire, UK

SUMMARY

Researcher, software development engineer and manager with a proven ability to initiate, develop and ship both systems and end-user software. Published expert with world-class knowledge of Java, Ruby, virtual machines, programming languages, concurrency and parallelism. Frequent speaker at major industry conferences.

EXPERIENCE

RESEARCH MANAGER, ORACLE LABS — 2014 - PRESENT

First developer and principal investigator of the TruffleRuby project
Working on high performance language implementation on the JVM, including Ruby and C
Project leader responsible for building a team of expert developers
Open-source community collaboration and developer engagement
chrisseaton.com/rubytruffle

DIRECTOR, MEDICAPPS — 2010 - 2017

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, and over £40,000 of funding from the NHS.
merseyburns.com

CAPTAIN, BRITISH ARMY — 2007 - PRESENT

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.
Training Captain in a reserve light cavalry squadron

EDUCATION

PHD, COMPUTER SCIENCE, THE UNIVERSITY OF MANCHESTER — 2015

'Specialising Dynamic Techniques for Implementing the Ruby Programming Language'

MENG, COMPUTER SCIENCE, THE UNIVERSITY OF BRISTOL — 2007

1st Class and awarded the faculty prize for academic and social achievement.

SPEAKING

Oracle Code 2017, RubyConf 2016, 2014, JavaOne 2016, 2015, FOSDEM 2015, and more

SKILLS

Research and development, Java and the JVM, Ruby, Python, C, virtual machines, programming languages, concurrency, parallelism, mobile health

COMMUNITY

Second in Command, C (Cheshire Yeomanry) Squadron, the Queen's Own Yeomanry, reserve military service in a light cavalry squadron
Academic Visitor, The University of Manchester
Maintainer of The Ruby Bibliography
JavaOne emerging languages program committee member, 2016
Dynamic Languages Symposium (DLS) program committee member, 2017, 2016, 2014
Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems Workshop (ICOOOLPS) program committee member, 2017
Technical reviewer, 500 Lines or Less

PERSONAL

UK national with UK security clearance
Hobbies include running, fencing, hiking, shooting

THESES

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.

RESEARCH PAPERS

M. Grimmer, R. Schatz, C. Seaton, T. Würthinger, M. Luján. **Cross-Language Interoperability in a Multi-Language Runtime**. In ACM Transactions on Programming Languages and Systems (TOPLAS), Vol. 40, No. 2, 2018.

T. Würthinger, C. Wimmer, C. Humer, A. Wöss, L. Stadler, C. Seaton, G. Duboscq, D. Simon, M. Grimmer. **Practical Partial Evaluation for High-Performance Dynamic Language Runtimes**. In Proceedings of the Conference on Programming Language Design and Implementation (PLDI), 2017.

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.

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, 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.

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.

JOURNAL ARTICLES AND EDITORIALS

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.

SUMMER SCHOOLS

Chris Seaton. **Self-Specialising Interpreters and Partial Evaluation**. At the Metaprogramming Summer School. 2016.

Chris Seaton. **JRuby+Truffle: Why it's important to optimise the tricky parts**. At the Virtual Machines Summer School (VMSS). 2016.

Chris Seaton. **Implementing Ruby Using Truffle and Graal**. At the European Conference on Object Oriented Programming (ECOOP) Summer School. 2014.

INVITED TALK

Chris Seaton, Medicapps Ltd. **Developing an app from idea to market and awards success with no funding**. At the Mobile Healthcare Industry Summit. 2012.

OTHER PRESENTATIONS

Chris Seaton. **Turning the JVM into a Polyglot VM with Graal**. At Oracle Code London 2017.

Chris Seaton. **Ruby's C Extension Problem and How We're Fixing It**. At RubyConf 2016.

Chris Seaton. **Faster Ruby and JavaScript with GraalVM**. At JavaOne 2016.

Chris Seaton. **Using LLVM and Sulong for Language C Extensions**. At the LLVM Cauldron. 2016.

Chris Seaton. **Guilt Free Ruby on the JVM**. At JavaOne. 2015.

Chris Seaton. **A Tour Through a New Ruby Implementation**. At FOSDEM. 2015.

Chris Seaton. **Deoptimizing Ruby**. At RubyConf. 2014.

Christian Wimmer and Chris Seaton. **One VM to Rule Them All**. At the JVM Language Summit. 2013.

Chris Seaton. **The Challenges of Irregular Parallelism**. At the University of Manchester Computer Science Research Showcase. 2012.

C. Seaton, D. Goodman, M. Luján, and I. Watson. **Applying dataflow and transactions to Lee routing**. At the 1st EuroTM Workshop on Transactional Memory (EuroTM). 2012.