

# Bilal Syed Hussain

bilalshussain@gmail.com

## SUMMARY

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PhD graduate from the University of St. Andrews specialising in computer science. Proven skills in software engineering, research and recipient of several academic awards. Looking for a software engineering role.

## EDUCATION

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**University of St. Andrews:** St. Andrews, United Kingdom

2012-16

*PhD in Computer Science*

I worked on the algorithm selection problem to choose the most appropriate method of solving combinatorial problems. Additionally I built a system to automatically create test cases for the purpose of testing a toolchain for constraint programming. One application of this software was regression testing. These ideas could be used to solve optimisation problems and to create test data automatically. Four papers were published during my PhD.

**University of St. Andrews:** St. Andrews, United Kingdom

2008-12

*Bachelor of Science with Honours, First Class, Computer Science*

During my studies I worked on two major projects, a team project as well as an individual project, both implemented using Java. I learnt topics ranging from artificial intelligence to computer networking and gained a first class degree as well as many awards.

### Honours and Awards:

- Dean's List 3 years running.
- Kelway Prize for overall best performance in the year.
- The O'Reilly Academic Prize.
- The Oglesby-Wellings Memorial Prize in Computer Science
- Medal for modules CS1002, Computer Science, and CS1004, Internet Programming.
- Google Scholarship for Students with Disabilities.

### Other achievements:

- Scored 19.5/20 for Junior Honours CS3099, Software Team Project, on Client and Server-side distributed instances of online Poker.
- Scored 19/20 for Senior Honours CS4099 Major Software Project

**Harris Academy:** Dundee, Scotland

2002-08

*SQA Advanced Highers, AAB, Computing, Mathematics, Physics.*

## SKILLS

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Experienced in C, Java, Python, Haskell and Linux Scripting. Well-versed in JavaScript and SQL, as well as, source control management systems, Git and Mercurial. Have knowledge of C++.

## WORK EXPERIENCE

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**Toshiba medical Visualization Systems:** Edinburgh, United Kingdom

2012

*Summer Intern*

I implemented a series of programs to automate the migration of a highly customized version of the bug tracking system trac to Jira using Python. Also wrote plugins in Java to extend Jira functionality.

Designed and implemented tests for flexible NetFlow in C. Implemented a framework for testing the distributed version in C. Also developed scripts to produce statistics about test code coverage using shell scripts.

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#### **ACTIVITIES AND MEMBERSHIPS**

Employed by the School of Computer Science at University of St Andrews as a teaching assistant; involved in tutoring, lab demonstration and grading.

Member of Circa (Centre for Interdisciplinary Research in Computational Algebra) at the University of St Andrews.

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#### **PAPERS**

Model Selection and Testing for an Automated Constraint Modelling Toolchain

PhD Thesis

University of St. Andrews: August 2016

Discriminating Instance Generation for Automated Constraint Model Selection

20th International Conference on Principles and Practice of Constraint Programming

Lyon, France: September 2014

An Automated Constraint Modelling and Solving Toolchain

20th Automated Reasoning Workshop.

Dundee, Scotland: April 2013

Automated Symmetry Breaking and Model Selection in Conjure

19th International Conference on Principles and Practice of Constraint Programming.

Uppsala, Sweden: September 2013

Instance Generation for Constraint Model Selection

19th International Conference on Principles and Practice of Constraint Programming.

Uppsala, Sweden: September 2013

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#### **OTHER PROJECTS**

I maintain the website of <http://www.csplib.org> a library of test problems for constraint solvers, in natural language. I created most of the infrastructure, hosted at <https://github.com/csplib/csplib>.

Other open source project/scripts located at <https://github.com/Bilalh> include an application to edit and locate audio metadata (with over 70,000 downloads).

My website is located at <http://bilalsyedhussain.com>.