# Matt Luckcuck BSc (Hons), MSc, PhD(Ebor)

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## Summary

I have recently graduated with a PhD in Computer Science from the University of York and I am looking for a new role where I can use my skills to help solve problems. I am comfortable working both alone and in small teams, and I always look forward to an opportunity to learn new skills to solve a problem. I have enjoyed programming since college. I consider Java to be my main language, but I also have experience with Python, PHP, Javascript, and Scratch.

My PhD has allowed me to develop several transferable skills. Preparing internal reports and producing four publications has helped develop my ability to write for technical audiences. I have presented my work at both small technical workshops and large international conferences, which has improved my confidence and skill at describing and discussing complex information. I have taken the opportunity to teach at various different levels and have found it both enjoyable and rewarding. During my PhD I assisted in the teaching of several degree modules, at both undergraduate and postgraduate levels. I have tutored an A-Level Computing student one-to-one, improving her result by two grade boundaries. I have also volunteered at a Code Club, teaching 9-11 year olds basic programming skills using Scratch.

## Work Experience

**2017** *York Learning*

**Session Lecturer** I delivered an 11 week adult-education course teaching introductory programming skills using Python. This involved presenting a lecture and then guiding the students through Python programming exercises designed to reinforce the material in the lecture and teach them the basic practical skills of programming. The lectures and resources were designed by me from scratch.

**2017** *York Maker Hub*

**Tutor** I taught children (ranging from 8-14) basic programming skills, in a busy environment that allowed the children some freedom in choosing the platform they used. The day-long sessions provide the opportunity for the children to build and program various projects on a variety of platforms, including Scratch, Makey Makey, and Lego Mindstorms. This role also involved supervising the children during breaks and lunch.

**Curriculum Design** I also helped to develop a new pathway for older or more advanced children who wanted to learn programming. This involved reviewing the currently available projects, collaboratively designing new Python projects, and then writing up the project instructions sheets and resources.

**2015** *University of York*

**Research Associate** During my PhD I was employed, part-time, to produce a tool that automatically translated program code for Safety-Critical Java into a formal model written in the state-rich process algebra *Circus*. This role was closely related to my thesis, so I managed the work alongside my PhD.

**2011** *University of Wolverhampton*

**Support Desk Technician** I provided front-line support to students using the university's computer systems. This involved polite and timely responses to requests regarding printing and WiFi access, for example. Emphasis was on following standard operating procedures and escalating more serious problems to the relevant teams within the university.

**2010** *National Institute for Health Research*

**Information Services Placement Student** During the placement year of my BSc I worked in the Service Desk, Testing, and Infrastructure departments. Each department presented its own set of tasks and challenges. Most of my time was spent in the Service Desk where I supported several hundred clinicians using a health research data collection system. I also spent several days leading the Service Desk team due to staff illness.

# Education

**2012 — 2016** *University of York*

**PhD in Computer Science**

*Safety-Critical Java Level 2: Applications, Modelling, and Verification*

**Supervisors:** Ana Cavalcanti and Andy Wellings

My PhD work models Safety-Critical Java (SCJ) using the state-rich process algebra *Circus*, which combines elements of Z and CSP. SCJ adopts a new programming paradigm for applications that must be certified. SCJ programs use a particular concurrency model and use region-based memory management (instead of garbage collection); specialised virtual machines are available to execute SCJ programs. It is organised into three compliance levels, of ascending complexity. My PhD focuses on the most complex compliance level, the programs of which are highly concurrent, potentially multi-processor, and make use of suspension and a variety of release patterns. My PhD provides the most complex compliance level of SCJ with its first semantics, enables further integration with other *Circus* semantics for SCJ, and provides automatic translation from SCJ to my model.

**2011 — 2012** *University of York*

**MSc with Merit in Computing**

Modules:

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|---|---|---|---|
| Formal Specification | 97 | Software Measurement and Testing | 70 |
| Concurrent and Real-Time Programming | 93 | Final Project | 66 |
| Group Project | 72 | Software Engineering | 66 |
| Java Advanced Programming | 70 | Database-Driven Web Design | 63 |
| User Centered Design | 70 | Computer Systems Architecture | 57 |

**2007 — 2011** *University of Wolverhampton*

**Bsc (Hons) First Class in Computer Science** including Placement Year

Modules Include:

| | |
|---|---|
| Java Programming | Oracle Databases |
| C/C++ Programming | HTML and CSS Websites |
| PHP Programming | |

# Other Activities

- Volunteering at a local Code Club, teaching 9-11 year olds basic programming skills using Scratch. The small group was of mixed ages and abilities. Each week we worked on a small game, each introducing increasingly complex techniques.
- Organising a one-day academic conference aimed at doctoral students. I helped lead a small committee of other students to plan the conference, review submitted work, and run the event on the day.
- Assisting in the teaching of several modules aimed at undergraduate, postgraduate, and other doctoral students.
- Tutoring an A-Level Computing student, one-on-one. We focussed on covering key topics, and improved the student's exam grade by two grade boundaries.

# Referees

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