# David McGillicuddy MSci
## Curriculum Vitae

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## Summary:

A passionate and enthusiastic developer, I truly enjoy programming and producing reliable, performant, and clear code. I have a strong bias towards functional programming languages but am pragmatic enough to write idiomatic code in OO-hybrid environments like .NET or the JVM. Good development practices including lots of testing (Unit, Integration, E2E) and CI are very important to me.

I believe that it's very important to keep learning and I'm always eager to learn new things. In addition I enjoy teaching others whether it's their first programming steps or a discussion about advanced techniques.

## Technology Experience:

**Advanced experience:** Scala, Rust, Haskell, CircleCI, Kubernetes, Docker, and SQL.
**Moderate experience:** Python, F#, C#, Java, VBA, OpenGL, Jenkins, and Bash.

## Relevant Work Experience:

**Embedded Software Engineer at Moixa** (2019 to present)
As an embedded engineer I am transforming a legacy C++ system which targets Raspberry Pis natively using Rust components to increase reliability and maintainability. Additionally I integrate new products into Moixa's smart home battery system by implementing communication with cloud APIs.

**Software Engineer at OVO Group** (2017 to 2019)
In the electric vehicle team I worked on a groundbreaking project to create an intelligent smart-charger. My part was to create and maintain the cloud APIs that the IoT devices connect to in order to facilitate registration of the devices during installation, to accept telemetry from the devices during operation, and to send commands to them as required. Kubernetes and Kafka were used heavily in order to produce reliable and scalable infrastructure.

**Scala Server-Side Developer at Moneyfarm** (2015 to 2017)
At Moneyfarm I was the third UK developer and helped deliver its initial launch in the UK working with developers in Italy. Since then the company has grown to ~60 employees, re-launched in Italy, and provided a B2B platform for Allianz GI. In addition to working on the platform generally for all of these, I was directly responsible for implementing end-of-day reconciliation of customer accounts with our partner bank and a number of integrations with third party providers, including an international identity database, a postcode lookup service, and a cryptographic document-signing system.

**Computer Science Postgraduate Researcher in Dynamic Programming** (2013 to 2015)
I presented my paper *An Investigation Into the Use of Haskell for Dynamic Programming* at the 10th International Conference on the Practice and Theory of Automated Timetabling; in addition I have spoken about my research at a number of conferences. I worked as a teaching

assistant for many many hours, tutoring students in many areas of computer science ranging from first-year beginner programming to post-graduate courses.

**Google Summer of Code** (Summer 2012)
Employed by Google and Haskell.org to work on Scoutess, a buildbot for Haskell packages. I worked in collaboration with overseas colleagues to produce a clean and useful codebase.

**Research Programmer at the University of Nottingham** (Summer 2011)
I worked with Java, XML and Swing to create a web applet to model data uncertainties.

**Analyst at National Grid** (Summer 2009 and 2010)
As part of the Regulatory team at National Grid, I created a system of models in Excel and VBA that forecast future power need and consumption in Great Britain.

## Academic Qualifications:
Received a 2:1 MSci in Mathematics and Computer Science from the University of Nottingham.

Achieved 4 A-levels in Maths (A); Further Maths (A); Physics (A); and Chemistry (B) at Solihull School, West Midlands. Obtained 13 GCSE A*-C grades.

Awarded the P. Ansell sixth form scholarship for Mathematics at Solihull School, West Midlands.

## Personal Interests:
- I was actively involved in the scouting organisation for over 10 years and volunteered as a scout leader
- I have volunteered at Firbeck primary school, Nottingham Central Library, and at Coder Dojo events to teach programming to children using the Scratch programming language
- Organised and tutored a lunchtime workshop in which I taught the basics of programming to members of other departments within the company who had no prior coding experience
- I gained grade 5 in piano and can also play the bass guitar
- Active interests include skiing and windsurfing
- Game programming - I have prototypes of games in Haskell, F#, Rust, and Scala. Additionally I run a Dominions 5 discord bot written in Rust.
- Microcontroller programming - I am currently working on a library for Arduino/Cortex M0 programming in Rust, some applications that use it, as well as the owner of the code transformation utility Form.