

Michael Perdue

Website: michael-perdue.github.io

LinkedIn: in/michael-perdue/

Email: michael0perdue@gmail.com

GitHub: [@Michael-Perdue](https://github.com/Michael-Perdue)

A detail-oriented programmer who is hard working, friendly and motivated, with experience in working in a team, collaborating with GitHub and being a scrum master from university projects. Knowledgeable and experienced in Java, C, Python, and SQL.

Relevant Experience

Summer projects (May 2023 – Present)

During the summer of 2023 I worked on various solo projects to extend and challenge my programming knowledge in Java, python and JavaScript.

Discord helper bot project

- I created a discord bot in python which provides a host of features from automatic message filtering with persistent storage of banned words lists, easy mass deletion of messages to message forwarding, coin flips and more.
- A challenge for this project was to run the bot 24/7 and to achieve this I setup a VPS to host the discord bot and made a docker image for the bot to ensure its as lightweight as possible for a VPS.

Graph generator with JavaFX

- I created a JavaFX program which detects CSV files from a folder, then extrapolates the data and lets you select 1 of 6 types of graphs and customize the graph.
- The program lets you easily export your customized graph to a PNG.

'Random website' - Google Chrome extension

- I made and published a google chrome extension which lets you surf the web with just a click of a button.
- The was written in JavaScript, CSS and HTML and it creates a popup with a button when you click the extension symbol. The button will then take you to a random site when clicked from a predefined list loaded from a JSON file.

Portfolio site (May 2022 - Present) (<https://michael-perdue.github.io/>)

- During the summer of 2022 I made a portfolio website using Jekyll and GitHub pages detailing the work that I have been doing at university and outside of university.
- It is continually updated and contains explanations, code snippets and demos of the projects.

Royal Society (June 2019 – November 2019) 6-9 Carlton House Terrace, London SW1Y 5AG

- My first experience of programming for a client, was when I was selected to work as part of a team on a Royal Society project with the aim of it to better engage with and teach younger people the key principles of how a computer works through VR (virtual reality).
- I gave a short presentation to the Royal Society and hosted a stall showing the VR game and talking to various people including industry experts about the project.
- One of the biggest challenges was integrating code written by different people and the way that I solved that was through introducing consistency of how code should be written with comments etc.
- This project was written in C#.

Education

MSci. Software Engineering with Industrial Experience (2020 – Present) Lancaster University

Scheduled to graduate with a First-Class MSci degree in July of 2024.

Java projects

- Created a plagiarism checker in Java with Swing which can check one text document with any number of other given text documents.
- Made a solar system model in Swing where you can add and remove planets and moons.
- A recursive depth first search, shortest path maze solving algorithm.
- I have made a passive replication system for an auction house using java RMI.

Python projects

- I have delved into computer networks in Python and made a raw implementation of ICMP Pings, Traceroutes (UDP and ICMP), Web server and proxy server.
- Using the cryptography module, I programmed the Diffie-Hellman (DH) key exchange, symmetric and asymmetric encryption and hashing.

C projects

- In C I have created my own implementation of Malloc and Free which has helped me gain a broader knowledge of memory management.

Second year group project C#

- We created a top-down beat-em-up style game in C# based around the Lancaster University campus.
- As part of the project, I created an A* pathing algorithm.
- Group work taught me about using version control (pull requests, code reviews etc.) with GitHub, to efficiently work on a coding project in a group.

Third year project - full stack development (C++, Java, Python rest API, SQL, HTML, JavaScript)

- During my third year I have been working on the full stack of a group project involving Micro:bits and creating a live distributed system.
- The system lets the user via our website configure a smart environment spanning multiple buildings, that reports the temperature, light, noise and location of people throughout the buildings, control the lights remotely and lets Micro:Bits act as an ID to open doors.
- The system can work for any domain and is fully manageable from the front-end website which is hosted on a VPS.
- I was involved in embedded coding of the Micro:bits in C++ which we setup to communicate via radio in mesh network and one Micro:bit serially writes the messages to a java program.
- Another one of my roles was the java program which was designed in an observer pattern to process different serial packets, then calling the API to store it in the database and write responses to serial. I also created Twitter and Facebook bots which periodically sends out, posts regarding readings.
- In earlier iterations I learned and used google protocol buffers to create and pass messages.
- Created and managed a MySQL database and an Influx database.
- In python I wrote a REST API using flask which has user verification and writes to a MySQL database using SQL statements and an influx database which was achieved through flux statements.
- I created the graph page for the website by using the graphs from Grafana.
- For testing purposes, I setup java and python unit tests, setup Grafana to view the live data in the influx database, performed extensive integration and user testing.

A-levels (2018 – 2020) Caroline Chisholm School

Computing (A*), Maths (A), Cambridge Technical Introductory Diploma in IT (Distinction*)

GCSE's (2016 – 2018) Caroline Chisholm School

Maths (8), Combined Science (7-6), Computer Science (6), English Literature (6), English Language (5), History (5), Art & Design (5), D&T: Graphic Products (C).