Samuel Newman

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Education

Computer Science with Year in Industry BSc at the University of Kent, Canterbury
Obtained a Distinction in Stage 1 (86% average, 4.0 GPA equivalent)

This year, I am studying modules such as Software Engineering, which is formalising my understanding of software development processes like Agile, and Functional Programming, where I am learning Erlang. Last year's modules were:

- **Object-Orientated Programming** (87% average): Java and Swing, using BlueJ.
- **Foundations of Computing I & II** (87% average): Maths modules that built on what I learnt at A level.
- **Databases and the Web** (91%): Basic HTML/CSS/Javascript, introduction to SQL.
- **Computer Systems** (89%):
  Computer Systems built on what I had studied at A level, and solidified my understanding of concepts like the fetch-execute cycle and the HTTP protocol stack.
- **Human Computer Interaction & People and Computing** (80% average):
  These two design-centric modules were the modules that I learnt the most from, and really broadened my understanding of how to design products from a human perspective, rather than a technical one. *People and Computing's* group work assessment also taught me a lot about working together with people I didn't know which was a very helpful experience.

A Levels: Computer Science (A), Maths (B), Physics (C) at Woodbridge School, Suffolk.

Employment

March 2019 - Ongoing | Codesigned Ltd (Web Developer)

Working remotely for Codesigned, I worked on multiple React-based projects as well as a large Python/Flask/PostgreSQL/JavaScript project on both the frontend and the backend. Codesigned taught me how to work in an Agile environment and exposed me to real production systems, as well as allowing me to interact with project stakeholders. I got experience with proper development/testing pipelines (Gitlab CI/CD) and using Git with other developers.

Codesigned taught me a lot about acquiring and implementing requirements for real systems, and showed me how complex software is built on a much larger scale than what I had previously experienced.

Technical Skills

Frontend Web Development

- Professional experience with React, including working with React Hooks and creating fully-featured React Native apps. Very familiar with modern JavaScript and SASS, and with interacting with complex REST APIs. Also familiar with Flask's templating system.
- Familiar with using JSON Web Tokens for authenticating API calls.
- Very experienced with making static websites with HTML/CSS/JavaScript.

Backend Web Development

- Professional experience working with a large and complex Flask application, which serves both a Content Management System and provides an API to an associated React Native app. It uses SQLAlchemy ORM to interact with a PostgreSQL database.
- Some experience using Express/Node.js, PHP, and MongoDB.
- Familiar with PostgreSQL, and constructing complex database queries.

Other Skills

- Professional experience with Git, Gitlab CI/CD, and automated testing with Jest.
- Experience with Blockchain and cryptography.
- Knowledge of Java to an intermediate level, and experience with UML use case/class/state diagrams.
- Some experience with UI/UX design for personal projects using Adobe XD.
- Experience hosting a website using Apache or Nginx on DigitalOcean and with using Heroku.
- Basic IT skills (MS Office, Bash) and familiar with NPM and Yarn.

Project Portfolio - *https://github.com/Mozzius*

Lyric - *https://github.com/Mozzius/lyric*

- Game based on remembering song lyrics.
- Uses Socket.io for live multiplayer mode.
- Using Python (Flask), MongoDB, Socket.io, Nginx.
- Hosted on DigitalOcean but currently migrating to Heroku.

Midwinter - *https://github.com/Mozzius/midwinter* (work in progress)

- Slack-style messaging web app.
- React / Express / PostgreSQL stack, with Socket.io for sending and receiving messages and JSON Web Tokens for authentication.
- Hosted on Heroku (https://midwinter.herokuapp.com).

"Arbitra" Cryptocurrency - *https://github.com/Mozzius/arbitra*

- A cryptocurrency (including manual ECDSA implementation and peer-to-peer networking).
- Implemented in Node.js and with an Electron client.

Personal Interests

I am very interested in technology, and I am often tinkering with small (usually web-based) projects. A large part of my programming knowledge was from self-motivated learning. Currently, I'm focusing on improving my knowledge of React (which is why I'm working on the Midwinter project).

Outside of that, I am an avid fencer, and whilst at University I joined the Fencing club where I was elected to the club's committee as the Treasurer, an important role since UKC Fencing is the university's top-scoring competitive sport's club. I also enjoy skiing when I can, having previously competed nationally. Whilst in Sixth Form I did Model United Nations, where I had the chance to go to a large international conference in Paris twice.

References

Peter MacKinnon (Codesigned Ltd): peter@codesigned.co.uk

Dr. Dominique Chu (University of Kent): D.F.Chu@kent.ac.uk