

Profile

I am a graduate from Aberystwyth University with a First Class Honours B.Sc in Computer Science and Artificial Intelligence. For my dissertation I researched the performance of existing machine learning techniques for the prediction of phenotypes from genotypes in plants. I have learned a proficiency in Java through extensive use during my education and I have experience developing commercial programs in Python and C++ in a professional environment. Through prior work and education I have acquired a strong and robust experience with source control processes and agile methodologies in the workplace.

Education

Aberystwyth University **2020 – 2024**

- Computer Science and Artificial Intelligence, B.Sc First Class Honours

Ivybridge Community College 6th Form **2017 – 2019**

- A-Levels in Computer Science (*B*), Geography (*C*), and Physics (*E*)

Employment

Software Engineer – Intern, RTX **August 2022 – August 2023**

- Collaborated remotely and in-person with a cross-functional team of engineers to develop a diverse range of commercial products.
- Managed three core back-end services written in C++ and containerized with Docker, ensuring their reliability and up-to-date functionality for their utilisation by multiple products.
- Developed REST API functions for web applications built with HTML, JavaScript, and EmberJS.
- Co-developed features for experimental software with the IRAD department, showcasing solutions to internal customers.
- Expanded my debugging and problem solving skills while working with third-party open-source libraries causing critical errors in core pipelines.
- Designed and developed UI elements and data-processing algorithms in Python for aiding in the generation and viewing of digital elevation models (DEMs).
- Wrote detailed and communicative documentation for back-end services, facilitating knowledge transfer for future developers and users.
- Investigated, designed, prototyped, and implemented a new feature and API hook for one of the backend services.
- Collaborated with the product owner to investigate, debug, and improve efficiency in an existing codebase, helping to reduce the request time for a new feature from 20 seconds to less than half a second.

Community Tester, Offworld Industries **July 2021 – August 2024**

- Worked alongside developers and community testers to identify bugs and weaknesses in test builds.
- Improved communication skills by relaying bugs and feedback to the community and the development team.
- Expanded my ability to present and discuss technical concepts to a wide range of audiences.

Skills and Achievements

Technical Skills

Python

- 10 years of experience creating both professional and scientific programs.
- Developed genetic analysis programs for evaluating DNA samples collected from cattle rumen.

- Developed a suite of machine learning models and auxiliary files for the prediction of phenotypes from genotypes in plants as part of my dissertation work.
- Extensive professional experience in processing aerial images, creating tiled images, digital elevation models (DEMs), and stereo images.
- Helped develop machine learning models to detect changes in aerial images.
- Developed a pipeline for the pre-processing of open-source elevation data for the creation of DEMs.

C++

- Professional experience in modern C++ for backend service development and maintenance.
- Worked on fast, efficient, containerised services providing high-demand processes in data-rich environments.
- Led efforts to update legacy services, improve codebase, and unify build and deployment pipelines.
- Designed and integrated a new feature for a backend API used in a new product development.

Go

- Self-taught Go during final year of university by converting old Python and C projects into Go.
- Used Go to complement expertise in C/C++ and explored industry applications.

Java

- Proficient in Java, primarily learned through university education.
- Worked as the Project Lead in a group project to develop a digital board game for a client in Java.
- Achieved high grades in Java-based modules, including 86% (First) in object-oriented programming and 73% (First) in algorithm design.

Web Development

- Designed and developed a personal website using NextJS and Typescript.
- Experience working on legacy websites using Javascript and EmberJS.
- Experience with modern frameworks like NextJS and React.

RESTful Services

- Developed RESTful hooks for mock testing in a RTX project.
- Collaborated with a colleague to design, implement, and test new features and APIs.

UNIX Systems

- Lived on MacOS and Linux since being sat in front of a Mac II to learn the alphabet on.

Object-Oriented Programming (OOP)

- Strong understanding of OOP principles and practical experience in designing object-oriented systems.
- Proficient in creating and following UML class diagrams to guide development.

Databases

- Experienced in designing and working with relational (MySQL, SQLite) and NoSQL databases.
- Achieved grades of 73% (First) and 63% (2:1) in database modules at university.

Docker

- Developed and updated Docker containers for backend services and testing-and-development environments at RTX.
- Designed and developed Docker containers to develop, test, and evaluate machine learning models during my dissertation.

Backend and API Development

- Developed and maintained core backend services used by multiple products at RTX.
- Designed and implemented backend API features to support new product functionality, with a focus on efficiency and speed.
- Achieved significant performance improvements in image processing, reducing response times by over 95%.

Git and Version Control

- Proficient in Git and with GitHub, GitLab, and BitBucket for project hosting and management.
- Skilled and considerate with version control practices for personal, educational, and professional projects.
- Nominated as Product Manager for a group project due to Git expertise.

Communication and Professional Skills

Remote Agile Development

- Worked remotely within an Agile team during industrial placement at RTX, improving time management and project planning.
- Participated in daily Scrum stand-up meetings to enhance communication and team collaboration.
- Independently developed an Agile rulebook to manage my dissertation project.
- Created a robust process using KanBan boards and sprint planning to guide my dissertation.

Communication

- Strong written and verbal communication skills, developed through academic and professional experiences.
- Skilled in explaining complex technical concepts and biological research clearly for diverse audiences.

Interests

I love discovering; during the 2021 summer I spent 2 weeks cycling 750km through northern France taking as many back roads and talking to whoever could understand my limited French. Living and studying in Wales, I have taken a keen interest in learning and expanding my Welsh language skills. I have also become interested in biotechnology and how we, as computer scientists and software developers, can help inform views on biological processes.

References

William Sherratt, Engineering Manager · +44 (0)1684 899844 · william.sherratt@rtx.com
Dr. Chuan Lu, Senior Lecturer in Bioinformatics · +44 (0)1970 628405 · cul@aber.ac.uk