

Profile

I am a graduate from Aberystwyth University with a First Class Honours B.Sc in Computer Science and Artificial Intelligence. I am currently looking for unique and interesting roles to start my career. 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

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.
- 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

- Utilised my passion for gaming and the community to provide valuable feedback to developers.
- 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.

Skills and Achievements

Technical Skills

Python

- 10 years of experience creating both professional and scientific programs in Python.
- 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.
- Strong experience with libraries like NumPy, Scikit-Learn, Pandas, Keras, and PyTorch.
- Extensive professional experience in processing aerial images, creating tiled images, 3D digital elevation models (DEMs), and stereo images.
- Understanding of 3D mathematics for creating models, such as ray tracing and digital elevation models.
- Developed code to run on high performance compute clusters at RTX.

- Strong experience as a Backend Python Software Developer.

Frontend Development

- Designed and developed a personal website using NextJS and Typescript.
- Worked on large scale, security minded, commercial web applications developed in JavaScript.
- Strong understanding of HTML 5.0 and CSS.
- Experience working with a range of frameworks including NextJS, React, and EmberJS.
- Experience developing RESTful hooks for mock testing in web applications.
- Collaborated with a colleague to design, implement, and test new features and APIs.
- Suggested and implemented UI improvements to commercial web products at RTX.
- Designed and developed a portfolio website with a focus on user accessibility.
- Developed new UI elements for experimental image viewing software.

C++, Java, and Golang

- Professional experience in modern C++ for backend service development and maintenance.
- Worked on fast, efficient, containerised services providing high-traffic processes in data-rich environments.
- Primary developer responsible for core services developed in C++ at RTX.
- Led efforts to update legacy C++ services, refactor codebases, and unify build and deployment pipelines.
- Designed and implemented backend API features to support new product functionality, with a focus on efficiency and speed in C++.
- 5 Years of experience creating personal and professional programs in Java.
- Worked as the Project Lead for a project to develop a digital board game for a client in Java.
- Self-taught Golang during final year of university by converting old Python and C projects into Golang.
- Used Go to complement expertise in C/C++ and explored industry applications.

Testing

- Experience working and developing in a test-driven-development (TDD) environment.
- Strong QA skills gained through a history of volunteer software QA and testing.
- Experience in developing automated testing, including unit, integration, and E2E testing, as integral parts of the development cycle.

Embedded Systems and Operating Systems

- Experience working with a range of embedded systems including Arduinos and autonomous rover-bots.
- Strong theoretical understanding of space robotic systems, and the associated hardware limitations.
- Over 20 years of experience working on MacOS and 10 years experience developing software on MacOS.
- 10 years of experience developing software in Linux and Windows environments.

Machine Learning and Data Processing

- First Class Honours in Computer Science and Artificial Intelligence.
- Designed and developed a suite of Machine Learning models for my dissertation, including ANNs, SVMs, Bayesian Regression models, Decision Trees, and others.
- Skilled at model training, analysis, and evaluation.
- Experience reading and reimplementing machine learning models described in research papers.
- Developed strong MLOps skills while developing ML models during my dissertation.

Computational Bioinformatics

- Experience developing and applying machine learning models to large omics datasets.
- First Class Honours in Computer Science and Artificial Intelligence.
- Learned to read and reimplement machine learning models described in research papers.
- Developed strong MLOps skills while developing ML models during my dissertation.
- History of writing computational bioinformatics research papers.
- Wrote a highly awarded technical research dissertation focused on machine learning prediction of phenotypes from genetic information.

Technical Authorship

- History of writing computational bioinformatics research papers.
- Wrote a highly awarded technical research dissertation focused on machine learning prediction of phenotypes from genetic information.
- Published highly praised technical documentation at RTX.

Unreal Engine

- Extensive experience in Unreal Engine 4.
- Utilised Unreal Engine 4 to design and create a $5km^2$ map of a real-world historical location as a level mod for an existing game.
- Modified and created new UE4 blueprints to enhance the gameplay of the modded level.

UI/UX Design

- Suggested and implemented UI improvements to commercial web products at RTX.
- Designed and developed a portfolio website with a focus on user accessibility.
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Data Processing and Databases

- Professional experience working with Postgres.
- Experienced in designing and working with relational (MySQL, SQLite) and NoSQL databases.
- Extensive experience designing and developing data processing algorithms for a wide range of applications, including for AI/ML training and 3D model generation.

Docker

- Extensive experience in containerisation and Docker development.
- Developed and updated Docker scripts for containerising and deploying backend services at RTX.
- Experience developing distributed systems with Docker.
- Confidently capable of transferring these skills to similar systems like Kubernetes.

Git, Version Control, and DevOps

- Proficient in Git and with GitHub, GitLab, and BitBucket for project hosting and management.
- Proficient with DevOps software like Jenkins and Jira.
- Experience working with automation tools in the CI/CD and Version Control pipeline.

Communication and Professional Skills

Remote Agile Development

- Worked remotely within an agile team during industrial placement at RTX.
- Independently developed an agile rulebook, including Kanban boards, to manage my dissertation project, .
- Strong understanding of the full software development lifecycle, in agile and non-agile environments.
- Strong familiarity with agile methods such as Kanban, Sprints, and Scrum methods.

Teamwork and Communication

- Experience working in large multi-faceted teams while volunteering as a Community Tester.
- Worked as the Project Lead in a group project to develop a digital board game for a client in Java.
- Collaborated with colleagues to design, implement, and test new features and APIs.
- Strong written and verbal communication skills, developed through academic and professional experiences.

Fast Learner

- Agile learner capable of quickly transferring existing skills to new fields.
- Eager to strengthen existing skills by learning from colleagues.

Interests

I love to discover; 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 more recently.

References

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