

I am a proficient, motivated, and committed post-graduate with professional experience in Python, Java, and SQL. Additionally, I have undertaken numerous personal projects in React and React Native.

TECHNICAL SKILLS

Programming Languages	Python, Java, C	Databases	MySQL, MS SQL
Operating Systems	Windows, Linux	Web/App Development	JS, React, React Native, HTML, CSS
Packages	JUnit, JavaFX, PyTorch, Pandas, Keras		

WORK EXPERIENCE

Software Engineer Tech Analyst Bank of America

07/2022 - Present

Dublin

Achievements/Tasks

- **Maintained Tier 1 Distributed Systems** - Was responsible for maintaining Tier 1 distributed systems that played a critical role in trading and regulatory reporting at the Bank. These systems utilized multiple **Linux servers** and **60 East's AMPS software** for publisher/subscriber-based data flow. Contributed to the development and maintenance of the system using the Bank's internal **Python** framework.
- **Built and Maintained ETL Data Metrics Automation** - Built an automation solution in **UiPath** and **Python** to collate and transform data from multiple data sources to generate monthly metrics and insights for our back-office operations flow. This is run every month and is leveraged to generate reports for upper-management.
- **Improved and Maintained XA Java Framework** - Improved and maintained our in-house Java tool that allows applications to utilize a high availability client used to publish/subscribe to the Tier 1 distributed system. It **encodes/decodes** messages, authenticates with **Kerberos**, outlines message schemas and has automatic failover and recovery mechanisms. These projects used **Bitbucket** and **Jenkins** for VC and deployment.
- **MS SQL Proof of Concept** - Built a relational database in MS SQL as a proof of concept for the data captured in the Data Metrics Automation. This involved creating **ERDs**, relating data tables, data **normalization** and **cleaning**, generating **queries** and **views**.
- **Anomaly Detection ML Model** - Built an anomaly detection forecasting model in **Python** to detect anomalous data flow across our Tier 1 distributed system. The model would forecast the expected **trade, settlements** and **regulatory reporting** volume of data distributed across the system and if it exceeded or did not meet a specific threshold an anomaly would be flagged.
- **Part of Agile Development Lifecycle** - An active member of an agile team that enforces standard agile and SCRUM practices including using **Jira** for Kanban boards, sprint planning and retrospectives with daily standups to discuss progress and blockers.
- **Completed Quartz Academy** - Quartz is an internal **Python** framework with inbuilt version control and deployment. Completed the Academy Course which involved **basic/advanced Python** skill development.

Software Engineer Intern Bank of America

03/2021 - 09/2021

Achievements/Tasks

- **Python** - Wrote scripts/programs in Python to integrate with different Bank technologies to assist in the data gathering process for an AI Proof of Concept.
- **Natural Language Processing AI** - Assisted in the development of a natural language processing AI using SVM classifiers for news article sentiment analysis.
- **Became a qualified UiPath Developer** - Created bots in UiPath to automate parts of the AML screening process and to provide insight in license reporting.

EDUCATION

1st Class BSc (Hons) Computer Science with Data Science University College Dublin

09/2018 - 06/2022

1st Class Honors

Relevant Courses

- Algorithms / Data Structures
- Machine Learning
- Software Engineering
- Databases

PERSONAL PROJECTS

Personal Tutoring Application - React Native (05/2023 - Present)

- Implementing the first sprint of a solo project that creates a cross-platform application in **React Native** that allows students and tutors to sign-up for lessons.
- Key features: Utilizes a **MySQL** database, user authentication and **Stripe** payment processing.

Voucher Mobile Application – React Native (03/2023 - Present)

- Implementing the second sprint of a personal project with a small team of six software engineers to create a mobile application in **React Native**.
- Involves a subscription-based voucher/coupons system that users can use for discounts/deals with local restaurants.
- Currently collaborating to create UI design, voucher redemption and creating the back-end of the app, writing APIs to store and retrieve user and restaurant data that is stored in a relational **SQL database**.
- Key features include: Facebook sign up, user authentication, restaurant favouriting, geo-hash location filtering, coupon redemption and savings calculator.

Thesis - Online Hate Detection (09/2021 - 04/2022)

- Wrote a thesis regarding Online Hate Detection with the premise to create a **multi-platform, Irish bespoke**, AI solution for detecting hate in online mediums.
- Created a **data pipeline** for cleaning and transforming data from multiple platforms including: **Wikipedia** and **Twitter**.
- Tested multiple classification mechanisms including **fine-tuning Google's BERT** transformer for comparison.
- Created an algorithm to replace key hate words detected by the model (using **XAI**) with Irish hate words and retrained the model with the new data to create a solution **finely tuned to detect Irish hate online** with an impressive **92% F1 Score**.

Scrabble Game - Best App Prize (01/2020 - 04/2020)

- Created the Scrabble board game in **Java/JavaFX** in a small team.
- This achieved **2nd place for the best app prize** of the entire academic year.
- Developed the game logic in **Java**, the GUI using **Java FX** and created a bot for the user to play against.
- Wrote **efficient algorithms** to calculate the best move for the bot and utilized data structures like **tries** to optimize dictionary lookup.
- Followed a **SCRUM development cycle**, consisting of five sprints where the SCRUM master would alternate each sprint. **Git** was used for version control and Trello was used for development planning.

SKILLS & COMPETENCIES

Leadership and Communication Skills

Client Migration at Bank of America

- Was the primary coordinator of **migrating approximately 100 clients** away from legacy hardware with the whole process taking 9 months to complete. Involved communicating with all of the clients and providing individual troubleshooting, like helping them to authenticate to the new hardware with **Kerberos**.
- Mentored two interns, giving **training, code reviews** and demos of internal systems.

Volunteering

Code Tutor

- **Code First Girls:** Volunteered to teach university level girls the basics of Python programming. The team I mentored **won 1st place**.

REFERENCES

Available upon request.