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# Jackie **Cai**

## Experience

**Macquarie Bank**| Software Engineer                                    Feb. 2023 – Present

Rotation 1 - Macquarie Trading System (Rates Team) | C++, Python, SQL:

- Improved the accuracy of curve data in the Macquarie Trading System by an average of 15% by developing a class in C++ that minimises noise through approximation of movement in liquid contracts
- Implemented a C++ functionality that verifies all mapping from the old data system to new data system is correct, eliminating a 1-hour manual process, and reducing testing time for developers
- Identified and decommissioned 15 obsolete databases during a platform migration saving $50,000 annually by analysing the usage and relevance of databases using SQL

Rotation 2 - Digital Loan Origination (Home Loans) | Java, Docker, Kubernetes, Spanner:

- Engineered new Java APIs for new home loan website backend, achieving a 20% decrease in customer processing time for home loan applications, and increasing retention rates
- Developed automated Java tests using JUnit and Cucumber to test API functionality and identify bugs, resulting in more robust and error-free application performance
- Integrated Temporal into the Automated Credit Engine, improving the platform's orchestration for more durable execution by updating the existing code with Temporal SDK in Java
- Migrated Bitbucket repository to Bitbucket cloud, setting up new Docker, Kubernetes and deployment

**PricewaterhouseCoopers (PwC) Australia** | Indirect Tax Technology Intern        Nov. 2021 – Feb. 2022

- Headed a team of 6 interns in a competition, achieving a top 4 of 16 teams for our app's UX/UI by presenting our design decisions in front of a panel of judges in OzHarvest
- Collaborated with other associates preparing tax documentation for clients, ensuring the accuracy of documentation for 20 clients and completing their tax filing
- Utilized Excel macros and regex to analyse customer relationship data for over 200 customers, identifying insights for decision-making for associates

## Skills

**Language:** C/C++, HTML/CSS/Javascript, Java, Python, SQL, Typescript
**Frameworks/Libraries:** Flask, JUnit, Node.js, React.js
**Tools:** Bazel, CI/CD, Docker/Containers, Google Cloud Platform, Jenkins, Kubernetes, Linux, Spanner

## Education

**University of New South Wales (UNSW) Sydney**            Graduated with Distinction, Jan. 2023

Bachelor of Science in Computer Science and Bachelor of Economics in Econometrics

- Courses: OOP in Java, Data Structures & Algorithms, Operating Systems, Networks and Statistics
- Recognized by UNSW Co-op Program and granted the Graduate Advantage Program (GAP)

## Projects

**PortfolioDex |** Typescript                                                            GitHub

- Designed a Pokemon-themed Portfolio to display skills, education and projects in Typescript

**Protask: A Task Management System** | Python, React.js, CSS, Flask, SQLAlchemy            GitHub

- Collaborated with 3 students to develop a Python-Flask backend for a task management system, enabling users to search, post, and assign tasks to other users in their network
- Designed a fast, responsive web app with a seamless UX/UI using React.js and CSS
- Made a relational database with SQLAlchemy to store user data such as authorisation and tasks

**Gloria Romanus** | Java                                                                GitHub

- Created a turn-based strategy game in Java where 2 players as factions conquer provinces
- Applied Object Oriented Paradigm to create classes in the backend, such as faction and mechanics
- Implemented the game's logic, such as win condition, bot behaviour and game progression

**Slackr: Slack Clone** | Python, Javascript, REST API                                    GitHub

- Managed a team of 4 to develop a backend system for a messaging app, implementing user authorisation, channel functionality, messaging API and storing user data using Python
- Integrated the backend and frontend for seamless communication between components and UI