Jake Lyell

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Current Computer/Data Science student with fundamental knowledge of software design, development, and testing. Seeking to utilize broad educational background with excellent analytical, technical, and programming skills to thrive as an entry-level software engineer.
Planning to pursue honours in Computer Science and Software Engineering in 2022.

EDUCATION

UNIVERSITY OF WESTERN AUSTRALIA, Perth, WA

Bachelor of Science, Double Major in Computer Science and Data Science: 2019-current

- GPA: [5.636], WAM: [71]

Relevant Coursework: Python Programming, Java Programming, Data Structures and Algorithms, Object-Oriented Design, Database Management Systems, Software Engineering Process Management, Data Warehousing and Mining, Web Development, Agile Methodologies, Statistical Learning, Machine Learning.

CHURCHLANDS SENIOR HIGH SCHOOL, Perth, WA

Graduated in 2018 with a 94.6 ATAR, Studied ATAR; Computer Science, Economics, Human Biology, Maths Applications and English.

SKILLS

- Python, Pandas & NumPy Libraries, Git/GitHub, Vue.js, React, Django, Java, R, C/C++, HTML, JavaScript, AJAX, CSS, Flask, Linux/Shell, Power BI

WORK EXPERIENCE

Web Developer for Saint Vincent de Paul | Dec 2021 – Feb 2022

Developed and populated a new intranet system for Vinnies WA, for use across 52 stores, warehouse depos, and head office staff. This private site hosts all internal documents, templates and forms for Vinnies WA, and is used by hundreds of staff and volunteers.

Executive Director of Trading at QFin UWA | Nov 2021 – Current (https://www.linkedin.com/company/qfin-uwa/)

Recently elected Executive Director of Trading at QFin UWA for 2022. QFin is a club that focuses on trading stocks and cryptocurrencies, utilizing algorithmic approaches. The role involves creating, running and participating in projects for 2022's Trading Team, along with organizing and running some trading-based events and workshops. Currently in the process of building both a website and an algorithm back testing framework for the club over summer. As a member of the Executive team, I am also involved in making decisions around the running of the club next year.

Projects in Progress

QFin UWA Website | Developer

Description: Creating a Web Application and Email Domain for the QFin UWA club which will display what the club is about our events, executive team and committee, and our sponsors.
Languages Used: React, HTML, CSS, JavaScript

- Designing professional looking and responsive web pages.

- Working alongside other developers within QFin to complete the website in a timely manner.
- The site will be accessible to both desktop and mobile users.

Algorithm Back Testing Framework for QFin UWA | Developer

Description: In the process of creating a rapid back testing framework to test the performance of quantitative trading algorithms for use by the 2022 QFin Trading Team.
Languages Used: Python

- Will allow users to test their quantitative algorithms on historical price data for stocks and cryptocurrencies.
- Will be highly documented to allow for ease of use.
- Will be optimized to allow for multicore processing and parameter sweeping for algorithm optimization.

Volunteer Software Engineer at Coders For Causes UWA | Developer | Nov 2021 – Current

Volunteer developer for the Coders For Causes club at UWA. A club that provides volunteer software engineering teams for non-profit companies and charities. I am participating in one of the summer projects for the Western Australian Institute of Sport in creating a web application for the track and field division.

Projects in Progress

Web Application for Western Australian Institute of Sport through Coders For Causes UWA | Developer

Description: Creating a Web Application for WAIS to help visualise the performance of pole vaulters in training. We will be incorporating computer vision software and user input to allow coaches to best train their athletes. Working in a team of volunteers through Coders For Causes.
Languages Used: Vue.js, Django, HTML, CSS, JavaScript

- The site will allow coaches to visualise factors of their athletes jumps like velocity, apex of the jump, trajectory etc, it will also store all jumps for quantitative analysis after the fact.
- The site will have a simple user interface to allow less technical users to use the software properly.

Trading Team Member at QFin UWA | Developer | Aug 2021 – Nov 2021 |

Trading Team Member at QFin UWA, The role involves completing projects focused on the concepts of Quantitative Finance, based heavily in Computer Science, Mathematics, and Finance. QFin won “Best New Club (2021)” at UWA, due in part to the performance of our Trading Team.

Data Entry and Analysis work at Bedrock MG for St John of God Hospital | Dec 2020

Performed Data Cleaning and Data Entry work for Bedrock MG to determine ICT requirements of the St John of God Hospital (SJOGH) fit out. Created Microsoft Access databases from large quantities of Excel spreadsheets in order to accurately decipher what ICT requirements must be fulfilled for the hospital functions to be delivered in the refurbishment and new developments at of SJOGH.

PROJECTS: https://github.com/JakeLDev

Visualizing Crime Data for WA Police Force | Developer | Project Manager & Team Member

Description: Created an interactive application for the Data Science and Analytics Division of the WA Police Force to visualize crime data trends on an interactive heat map of Western Australia.
Languages Used: Python

- Worked primarily in Python, using Pandas for Data Manipulation, Plotly for Graph Generation, PyQt5 for the Graphical User Interface and SciPy for Anomaly Detection.
- Utilized Agile Scrum methodologies in a group of 6 to produce timely Sprint-based deliverables.
- Worked closely with the Data Science and Analytics division of the WA Police Force, to ensure that we delivered the client a product that fulfilled their needs.
- Performed a team leadership role, including ensuring that deliverables were completed on time, and managing my team's resources and task allocation.
- We used Python to create a program with user-friendly UI, and the ability to generate detailed heat maps containing user-selected metrics, for use by Police District staff.
- The application also detected and highlighted anomalies within the crime data, which can then be highlighted on the heat map.

Momentum Trading Algorithm | Developer | Team Member

Description: Created a set of algorithms to trade cryptocurrencies, based around the trading strategy of "momentum trading". The results were then documented in a report.
(The Semester 2 Project for QFin UWA's Trading Team)
Languages Used: Python

- Worked in a team of 3 people to create a set of Python algorithms with the goal of achieving a positive return when trading on 2020 price data for popular cryptocurrencies
- Performed significant testing to determine the best combination of algorithm and parameters to produce a consistently well performing algorithm.
- Wrote an in-depth report on the process, detailing our thought process and steps we took throughout the project

"The Resistance" Card Game Artificial Intelligence Agent | Developer | Team Member

Description: Researched and developed a game-playing Artificial Intelligence agent to play the card game "The Resistance" to compete in a tournament at UWA.
Languages Used: Python

- Researched and reported a literature review on common game playing algorithms for imperfect information games in my team of 2 people.
- Created an agent that utilizes Bayes' Rule for calculating probabilities in a Bayesian, imperfect information game.
- Co-Authored the final report detailing our process in research, creation and testing of our agents to answer the self-written research question.

Poker Tutorial Website | Developer | Team Member

Description: Developed a Web Application to help people learn the basics of Poker, complete with user accounts, authentication system and interactive lessons.
Languages Used: Python (Flask), HTML, CSS, JavaScript

- Implemented a user accounts system with secure authentication, to allow users to track their progress through the lessons and quizzes.
- Developed a well organised website with a user-friendly interface and smooth flow between webpages.