**Anay B. Joshi**

AU Citizen | abjoshi26122@gmail.com | (+61) 403882664 | GitHub: Anay-Joshi26

**EDUCATION**

**University of Western Australia (UWA) Perth, WA**

*Bachelor’s in Advanced Computer Science (Honours) Expected Graduation, 2025*

* **Concentrations/Major:** Computing and Data Science
* **GPA & WAM:** 6.83/7(GPA) & 85.25 (WAM) [Year 3, Semester 2]
* **ATAR (entered university with):** 98.95
* **Related Coursework:** Data Structures & Algorithms, Statistical Analysis and Model Regression, Object-Oriented Programming (OOP), Systems Programming, Agile Web Development, Data Science and Data Engineering, Database Warehousing, Computer Networks, Multivariate Statistics & Analysis, Intelligent Agents, Machine Learning

**SKILLS**

**Technical Skills:** Java, Python, R, JavaScript, HTML/CSS, SQL, C, Git, Neo4j & Cypher (Graph Database), Django, jQuery, Bootstrap, a AWS, PyTorch, Flask, FastAPI, Jupyter Notebooks, Agile, Docker, Cloud Firestore

**Other:**

* Enjoy team collaboration, and am a strong communicator
* Curious nature for how and why things work as they do
* Gracefully onboard feedback, for personal/team improvement
* Strategic and critical thinker (fast learner), love problem solving
* Adaptability to new technologies and frameworks

**EXPERIENCE**

**Wesfarmers Perth, WA**

*Data Science Intern Nov 2024- Feb 2025*

* Worked with Wesfarmer’s chemicals and energy sector (WesCEF) and their data science team on a geospatial data science project to better monitor, report and track vegetation (NDVI) of tenancies and exploration sites.
* Involved collecting, filtering and manipulating geospatial data, creating a web application which leveraged Google Earth Engine to analyse vegetation changes over time.
* Built a time series multiple regression forecasting model (variant of SARIMA) to predict vegetation changes into the future to generate better site rehabilitation insight. Rigorous statistical analysis was conducted for parameters of the model.
* Used Pandas, NumPy, Google Earth Engine and web technologies such as Flask to build the analysis tool.
* The final tool, including the predictive model would result in an estimated **thousands of dollars** of savings annually, saving costs for in-person geologist expeditions, expensive aerial imagery and botanists.

**PROJECTS**

**Perth Explorer Game (**[**PerthPinpoint**](http://www.perthpinpoint.city)**) Web App Perth, WA**

*Team Member (part of a team collaboration) Nov 2023 – now*

* PerthPinpoint is a web-app which is akin to [GeoGuessr](https://www.geoguessr.com/), in which players are dropped in some location in Perth and must determine where they are, and/or find locations and landmarks around them.
* The app uses services provided by **Google’s API**, such as their ‘Maps Javascript API’ and their Street View embed API to create an immersive and fun experience for the user.
* The app handles asynchronous events to create a fast and seamless experience for a user.
* Technologies Used: HTML, CSS, JavaScript, FastAPI (Python), SQLite3.
* The website is deployed and has **thousands of visits and** **real users** who have submitted meaningful feedback
* Link: [codersforcauses/beginner-2023summer-g4](https://github.com/codersforcauses/beginner-2023summer-g4)

**UWA Student Attendance App Perth, WA**

*Team Member (part of a team collaboration) Mid 2024- Late 2024*

* The goal of this project was to design and develop an attendance app for UWA unit coordinators to track the attendance of UWA students into engineering classes.
* It streamlines attendance marking, offering live updates via Server Sent Events with multiple users, fully developed authentication and a secure SQL database. Backend written in Flask, with database to be migrated to AWS RDS.
* Had admin functionality to configure units, import and student data, and assign facilitators. Data could also be exported to CSV for marking and to issue grades for students.
* It was deployed on an AWS EC2 instance, but its use is restricted to UWA staff only.

**Discord Music Bot Perth, WA**

*Personally Developed (Independent) Late 2022–Mid 2023*

* Discord is a social media platform, where users can join voice calls with multiple other people.This discord bot will join the same voice channel (acting as a person) and play music chosen by the other members in the voice call for everyone to hear.
* The bot works using commands which can be typed in text chat by the people in the group.
* The bot is written in Python and uses the Discord.py library, the program manages a queue data structure of songs (so users can pile up song requests) and does music playback via YouTube. **Uses OOP and extensive asynchronous functionality** so that multiple operations **across multiple servers** can be done simultaneously.
* The bot has a **cloud Google Firestore database** allowing servers to create and store their own custom playlists.
* **It connects with API’s such as Spotify’s** to allow users to play their own public Spotify playlists and displays. The bot also supports YouTube Music playlists.
* *Link:* [*Anay-Joshi26/axlebot-discord-bot*](https://github.com/Anay-Joshi26/axlebot-discord-bot)

**File Syncroniser (C11 Programming) Perth, WA**

*Personally Developed (Independent) Early 2023- Mid 2023*

● The goal of this project was to design and develop a command-line utility program to synchronise the contents of two or more directories, so that all directories have the same content after the synchronization.

● Utilised C11 programming language features, POSIX function calls, and the Make utility for project compilation and execution.

● Employed globbing for wildcard expansion in file patterns, converting them to regular expressions for matching filenames.

● Supported features like recursive directory processing, preservation of file modification times and permissions, and selective file synchronization based on patterns.

● *Link:* [*Anay-Joshi26/File-synchroniser*](https://github.com/Anay-Joshi26/File-synchroniser)

**Model Regression Analysis Perth, WA**

*Personally Developed (Independent) 2023 & 2024 - now*

* Worked on numerous assignments involving model regression with various types of data. Data which needed use of the Poisson family of distribution, binomial. Moreover, zero-inflated data sets with separate regression models for part of the data.
* Worked with Mixed Linear Effect models with repeated measures and clustered data which involved working with random and fixed effects and needed fitting of variance and correlation structures to variables to achieve a better fit.
* Experienced with modelling linear, non-linear, generalized linear models and mixed effect models.
* This rigorous data analysis and model regression was all conducted in the R statistical environment.
* Have written well-presented and statistically accurate reports based on the model findings. The report contained model interpretations and followed proper statistical analytical procedures.

**Collaborative Filtering Game Recommendation AI model (currently developing) Perth, WA**

*Personally Developing (Independent) 2024 - now*

* Currently, I am developing a **deep learning** neural network model which aims to provide better and more meaningful recommendations when compared to Steam or other game providers.
* The model programmed using the PyTorch library, and at its core is a collaborative filtering model which attempts to determine the best recommendation based on what other people play.
* The model is trained on a large publicly available dataset (approx. 41 million entries)
* Currently the model is in development/training phases to optimize it further. Plans exist to embed the model into a user-friendly web app written using Django where it can be used by others.