Anti

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EDUCATION

University of Queensland Brisbane, QLD
Bachelor of Computer Science, Majoring in Machine Learning *2022-present*
- **Cumulative GPA:** 6.65/7 (Dean's Commendation of Academic Excellence: 2022, 2023)
- **Extracurricular**: Panelist on UQCS' First Year Panel 2024, involved member at events like the UQCS' Hackathons, Codejams, and talks.

EXPERIENCE

Casual Academic Jan 2024 – Present
School of Electrical Engineering and Computer Science - University of Queensland *Brisbane, Australia*
- Tutored COMP2048 (Theory of Computing), explaining and teaching classes of students about Turing machines, recursive functions and computability.
- Tutoring COMP3702 (AI) to a class of 40+ students over a semester, explaining search, decision-making under uncertainty, markov models and how neural networks can solve constructed problems.

PROJECTS

Dataplanet - UQCS Hackathon | *Node.js, Javascript, GlobeGL, HTML, Git* Aug 2022
Developed a 3D data visualisation project as project leader and backend developer, allowing users to explore a globe and interact with real-time datasets related to UN sustainability goals.

- Designated project leader, and delegated team priorities, organised deadlines and core priorities for the product goals, which led to a successful and completed project.
- Handled REST API calls to multiple servers and manipulated JSON queries to render poverty and air pollution data in real-time on the browser.
- Used trunk-based development with Git to minimise merge conflicts for pull requests. Read documentation to understand how to manipulate the graphics to desired shape, along with data handling.
- Recognised and rewarded by Google, Amazon, and UQCS. See Honours & Awards for more details.

Brute-Force Password Cracking System | *C, SSH, Networking, Multi-threading, Unix, TCP/IP* May 2023
Developed a client (`crackclient`) and server (`crackserver`) system for password cracking and encryption, showcasing multi-threading and basic TCP communication in C via terminal, along with CLI tool usage.

- Implemented a brute-force decryption algorithm with word-lookups using multithreading for efficient password cracking, which on average sped up processing times by x10.

NanoGPT and Neural Networks from scratch | *Python, Numpy, Pytorch, Git* Feb 2023
Created a character level Generatively Pretrained Transformer (GPT), following the paper "Attention is All You Need" and OpenAI's GPT-2 / GPT-3, which can load real GPT-2 weights. Visualised statistics about neural networks, and created models from classical bigrams to full MLPs and transformers, trained on Shakespeare datasets.

- Constructed an initial bigram model capable of receiving multiple batch dimensions (size B,T,C) for efficiency.
- Implemented decoder-only self-attention heads, enabling effective sequence information communication within the model. Also added blocks of multi-headed self attention, feedforward layers and layernorms to improve model capabilities.

AWS Wild Rydes - 2022 | *AWS Services, Git, Shell, Terminal* Oct 2022
Developed a serverless web application for Wild Rydes, a unicorn ride service, that enables users to request rides and register/login to the service. Used AWS services to handle user interface, backend API, user management, and data storage.

- Utilized AWS Lambda and Amazon API Gateway to handle requests efficiently, allowing for scalable and responsive interaction with the application. Used Amazozn DynamoDB for database services.
- Implemented Amazon Cognito for user management and authentication, providing secure and scalable user access.
- Deployed the application using AWS Amplify Console to host the static website.

HONOURS AND AWARDS

- **Google Generations Scholar** Google
  Awarded a generous grant for creating Dataplanet by the AUS & NZ Generation Oct 2022
  Generation Google Scholarships event, and completed a short virtual presentation on the project.
- **Amazon Sustainability Data Initiative (ASDI) Global Hackathon** Amazon
  Winning solution out of 1500 participants for Amazon's hackathon revolving around Sept 2022
  UN's sustainability goals resulting in $2000 AWS credits.
- **Best Community Award - UQCS Hackathon** University of Queensland
  Awarded best project "aimed at helping a philanthropic or community organisation, Aug 2022
  or addressing a social justice problem."