RODO NGUYEN

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SUMMARY

- A Computer Science Graduate with extensive experience in Software Engineering and aspiration for Machine Learning.
- Worked in top research organisations in Australia, a software consulting company and customer-facing roles.
- Problem-solver and Fast learner with project management skills and the ability to excel under pressure.
- Champion of writing clean and maintainable code. Security at heart.

EXPERIENCE

Vacation Researcher – CSIRO - Data61   Nov 2022 – Feb 2023
- Single-handedly explored and evaluated suitable C++ machine learning libraries for a new EdgeAI & Computer Vision project. Found an open-source one - MLPack - and implemented some prototypes to demonstrate to supervisors.
- Conducted multiple experiments on multiple devices which provide insights into the library's resource consumption (memory, runtime), ensuring the stability of the library.
- In the end, revised the outcome and drew a viable "Deployment Phase" plan for the future team which is to utilise this library to run on-device ML training on Raspberry Pi Zero W.

Software Engineer – S23M | *GitHub*   Mar 2022 – Nov 2022
- Built an app with a minimal yet, modern User Interface to interact with a Health Data Server (CRUD) as a trial model for an international health organisation.
- Implemented core features of the app, allowing querying and editing data through RestAPI and presenting queried results intuitively on the Client-side, using React, NodeJS, AgGrid, Bootstrap.
- Led the team for a period, ensured progress is on-track with the sprint plan, and communicated clearly with the product owner to meet their expectation.
- Constructed detailed onboarding documentation and tutorials for users / future developers.

Software Engineer Intern – QUT   Dec 2021 – April 2022
- Evaluated the effectiveness of Verifiable Python (vPython) for software cybersecurity by testing, improving it in the development environment and ensuring output consistency.
- Developed a completely new automated analysis pipeline (Bash Script and Python) that eliminated ~95% of manual work: executing the programs, analysing output, and recording results.
- Won the Outstanding Achievement Award at the end of the program.

International Students Officer – QUT Student Guild   Dec 2020 – Dec 2021
- Advocated for international students on a university-wide scale.
- Provided them with additional assistance and services to thrive: foodbank, social activities, counseling, etc.
- Liaised with a wide range of external stakeholders: university admins, not-for-profit organisation, and businesses to utilise resources more efficiently.

HIGHLIGHT PROJECTS

CoolerDate
MongoDB, ExpressJS, React, NodeJS | Web App | GitHub
- A unique full-stack app built to make "Asking someone out for a date" simpler and even more special.
- Applied MERN architecture, implemented multi-step forms and a multitude of API endpoints, integrated MongoDB, and utilised React Hooks (e.g., useMemo), all of which broaden my experience in Full-stack development, System Design, and Database Modeling.
- Fully automated server testing process by using Chai framework due to growing level of complexity.

Twitter E-nalyst
React, ExpressJS, AWS, RestAPI | Web App | GitHub
- Built a React web application with a modern user interface that generates keyword sentiment analysis on Twitter.
- Implemented scalable server using AWS EC2, Elastic Load Balancing and Auto Scaling stack to handle inconsistent usage.
- Reduced latency by 10 times by integrating persistence services (S3, Redis and ElastiCache).

BitTracker
Pandas | Time-series data, Finance | GitHub | Blog
- Programmed a cryptocurrency trading bot in Python that can auto-trade efficiently while guaranteeing minimal risk.
- Backtest results showed +110% profit annually on average by utilising SuperTrend algorithm. This is made possible by programmatically and analytically assessing each configuration's risk-adjusted return and profit/loss distribution.

- Applied OOP to facilitate maintainability and extensibility as a large number of features were integrated into the bot.

Personal Website
React, HTML, CSS | rodonguyen.dev | GitHub
- Programmed and deployed my personal website from scratch with React.
- Cutomised CSS to obtain responsiveness on any device (no Bootstrap). Of course, integrated Dark Mode to accommodate users with photophobia or simply prefer dark theme. This broadens my knowledge of UI Design.

Twitter Spam Detection
Python | Machine Learning, Natural Language Processing | GitHub | App
- Led a team of 4 to design 4 separate Machine Learning models that can identify spam tweets with >95% accuracy (LSTM, Transformer, SVM, and Naive Bayes).
- Analysed each model's strengths and shortcomings and evaluated the suitability for real-world application: Naive Bayes won due to its low training, inference time, and high weighted-F1.
- Further minimised the computation consumption and sped up training time by removing uninformative features while keeping the accuracy unaffected.

This repository also consists of other ML projects: Movie Recommendation (Clustering), Number Recognition (Computer Vision), Person Re-identification, Forest Classification, Crime Prediction (Regression Model)

SKILLS

4 years of building software and machine learning models, 1 year working in top research institutions in Brisbane:
- **Python**: 4 yrs building **Machine Learning models** with Keras, PyTorch, Sklearn; Trading Bot and **Data Visualisation/Analysis** (BitTracker) with Pandas, Numpy, MatplotLib; Leetcoding; implementing A*/Tree Search in Sokoban Solver.
- **JavaScript, HTML/CSS**: 3 yrs building **Full-stack App** with React, Docker, AWS cloud service (CoolerDate, Twitter E-nalyst, Personal Website). Frameworks: ExpressJS, MongoDB, Chai, Mongoose, Bootstrap, Meterial UI.
- **C#, Java, C/C++**: 2yr working on **OOP projects**, applying data structures, search algorithms.
- **SQL**: 2yr implementing **database** for various projects; MySQL, SQLite.
- **Bash Script**: 1yr automating programs and tasks in researching roles.
- **Project management**: Jira, Slack, Agile, Trello, Scrum.
- **Others**: Linux/Ubuntu, Git/GitHub, Embedded Systems.

EDUCATION

Queensland University of Technology (QUT)   Graduated 2022

Bachelor of Information Technology - GPA: 6.4 / 7.0
Computer Science Major; Intelligent Systems Minor

Achievements: International Merit Scholarship, Dean's List
Favourite units: Web Computing, Cloud Computing, Algorithm Design & Data Structures, Machine Learning

VOLUNTEERING, TEAMWORK & ADDITIONAL ACHIEVEMENTS

Ravi's Study Program: 3-month Intensive Programming Bootcamp   2023
HiQ Concierge at QUT: Worked collaboratively and communicated effectively to serve our students and the public   2022
Australian GovHack: Honourable Mention with project 'Outliers' in Youth Education and Employment   2021