

Mercy Doan

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Education

Queen's University, Bachelor of Computing (Honors) Sep. 2020 – Apr. 2024
Specialization in Computing/Mathematics, focus in Data Analytics/Statistics (3x Dean's Honor List) Kingston, ON
Areas of Study: Data Analysis, Artificial Intelligence, Machine Learning, Databases, Data Structures, Algorithms

Technical Skills

Languages: Python, Java, Javascript (React, Node.js), CSS, HTML, MATLAB, R, Bash, C, SQL, PHP
Frameworks/Technologies: Anaconda, Git/GitHub, Figma, Canva, Jest, Jira, Playwright, Supabase, WordPress
Libraries: Pandas, NumPy, HuggingFace, SciKitLearn, TensorFlow, Keras, PyTorch, OpenCV, Discord, Bootstrap

Experience

NLP Director of Design May 2022 – Present
QMIND (Queen's University Artificial Intelligence Club) Kingston, ON

- Guided 5 project managers to build NLP projects through leadership and reflection workshops
- Educated students on using GitHub, machine learning libraries, and NLP techniques such as statistical models, Ensemble methods, deep learning, LSTMs, Transformers, supervised/unsupervised regression/classification, etc.

Vice-President of Operations May 2021 – Present
COMPSPA (Queen's Computing Students' Association) Kingston, ON

- Led 7 teams of 50+ students to support and enhance the undergraduate Computing student body's experience in Academics, Equity, Events, Marketing, Professional Development, Year Representation, and Tech
- As UI/UX team lead, communicated with stakeholders, designers, and developers to build a new COMPSPA website, a full-stack application used by 1500+ students made with React and Figma

Cybersecurity Researcher May 2022 – Sep. 2022
Google ExploreCSR Kingston, ON

- Analyzed and applied research papers on autonomous vehicle security, software development life cycles, vulnerability detection, and machine learning techniques used in cybersecurity
- Proposed new ways to improve an autonomous vehicle software security and development method by using regression and deep learning to prioritize vulnerability metrics

Computing and Math Teaching Assistant Sep. 2021 – May 2023
Queen's School of Computing, Queen's Mathematics and Statistics Department Kingston, ON

- Provided office hours and feedback on math, Python, Java, and discrete math assignments for 200+ students weekly, and debugged code with concepts such as recursion, algorithms, machine learning, regex, OOP, etc.

Projects

Security Vulnerability Detection with Transformers | Python (HuggingFace, SciKitLearn) Sep. 2022 - Mar. 2023

- Led a team of 4 to build a NLP model that detects security vulnerabilities in code based on CWE metrics
- Trained, finetuned, and compared Transformer, neural network, and probabilistic models on 250k samples of labeled PHP code, and was selected to present results at CUCAI (Canadian Undergraduate Conference on AI)

Discord Utility Bot | Python (Discord API, Instagram API) Oct. 2023 - Present

- Built a bot used by 5000+ combined users that sends live updates of Instagram posts and stories

Data Analytics Projects | MATLAB, Python (Keras, TensorFlow, PyTorch) Jan. 2022 - May 2023

- Reported on 10 data analytics projects using methods such as PCA, LDA, SVMs, perceptrons, dimensionality reduction, constrained/unconstrained optimization, variable selection, regularization, and artificial neural networks
- Built computer vision models for number and clothing item classification, achieving up to 97% accuracy

Research Projects | Python Sep. 2023 - Present

- Queen's Hyperloop Design: Trained an A* algorithm to optimize travel routes between cities
- ProjectX AI Research Competition: Used forgetting methods to optimize data efficiency in LLM training