# 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, Jira, MS Office, 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 8 project managers to build NLP projects through leadership and research workshops
- Educated students on using GitHub, machine learning libraries, and NLP techniques (statistical models, Ensemble methods, deep learning, LSTMs, Transformers, supervised/unsupervised regression/classification, etc.)

**Vice-President of Operations**　　　　　　　　　　　　　　　　　　　May 2021 – Present
*COMPSA (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 COMPSA 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 Python, Java, discrete math, and AI 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
- Cancer Detection: Use matrix methods to detect cancer cells in tissue samples