# Quenton Ni

qton680@gmail.com • (701) 306-5462 • github.com/nizhin • nizhin.github.io/portfolio

## EDUCATION

**M.S. in Computer Science** — ***Minneapolis, MN***
University of Minnesota — *May 2027*
*College of Science and Engineering*

**B.S. in Computer Science, Minor in Management Information Systems** — ***Minneapolis, MN***
University of Minnesota — *May 2026*
*College of Science and Engineering* — GPA: 4.00

## EXPERIENCE

**Software Engineer (Capstone)** — ***Minneapolis, MN***
*Medtronic* — *Sep 2025 – Present*

- Partnering with Medtronic engineers in a year-long academic–industry collaboration to design, implement, and test a secure software solution in the medical technology domain.
- Define project scope, document system specifications, and ensure all design components comply with industry and regulatory standards.
- Contribute to the full Agile development lifecycle, including architecture design, coding, testing, and peer code reviews while leveraging DevOps tools such as Git and Azure DevOps.

**Research Assistant** — ***Minneapolis, MN***
*University of Minnesota-Twin Cities* — *Sep 2025 – Present*

- Conduct research on neural network quantization, exploring number representation schemes (e.g., fixed point, block floating point) to improve model efficiency.
- Implement experiments in Python/PyTorch and review literature on quantization methods to support ongoing research.
- Designed benchmarking experiments comparing quantized and full-precision neural networks.

**Computer Science Teaching Assistant** — ***Minneapolis, MN***
*University of Minnesota-Twin Cities* — *Sep 2024 – Present*

- Guided 400+ college students in learning concepts related to Java programming and data structures by facilitating regular communication with students, holding weekly office hours, and testing course content for assignments, projects, and exams.
- Coordinated weekly labs for 30+ students, prepared lab resources, led students through 2 hour sets of Java programming**.**

**Machine Learning Teaching Assistant** — ***Minneapolis, MN***
*UMN Data Science and AI Hub* — *May 2025 – August 2025*

- Supported PhD-led instruction for 90+ high school seniors in the UMN DSI AI Explorers Summer Program
- Taught machine learning concepts like deep neural networks, convolutional architectures, generative models, transformers, and reinforcement learning using libraries like PyTorch and scikit-learn.

## Projects

**Pokémon Type Classifier**

- Developed image classification models to predict Pokémon types using convolutional neural networks (CNNs) and Vision Transformers (ViTs) on a custom labeled dataset of Pokémon images.
- Preprocessed and augmented over 1,000 Pokémon images to improve model robustness and handle class imbalance across multiple type categories.
- Evaluated model performance using precision, recall, F1-score, and confusion matrices and iteratively refined hyperparameters to improve classification accuracy.

**Visual Transit Simulator**

- Contributed to the design, documentation, and implementation of a Visual Transit Simulator (VTS) that models vehicle and passenger behavior across transit routes.
- Created and updated UML class diagrams and Javadoc documentation, adhering to Google Java style guidelines.
- Designed and executed comprehensive unit tests, ensuring robustness and compliance within requirements.

**SQLite Clone**

- Developed a lightweight relational database inspired by SQLite, implementing core database functionalities in C.
- Utilized a B-tree index structure to optimize query performance and minimize full table scans.

## TECHNICAL SKILLS

**Languages:** Python, Java, C, JavaScript, Typescript, HTML, CSS
**Technologies:** PyTorch, NumPy, Scikit-Learn, Transformers, Git/GitHub, Docker, Vue, Flask, Azure, Azure DevOps, SQL, PostgreSQL, REST APIs, Agile/Scrum
**Relevant Coursework:** Applied Machine Learning, Machine Learning Fundamentals, Algorithms and Data Structures, Operating Systems, Machine Architecture