

Nguyen Trinh

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EDUCATION

Drexel University, Philadelphia, PA

Expected: Jun 2029

B.S. in Computer Science & B.A. in Mathematics

GPA: 4.0/4.0

Honors: Drexel Global Scholar (*full-tuition, 1 of 7 worldwide*), STAR Scholar (*first-year research*), Pennoni Honors College

Relevant Coursework: Advanced Programming Techniques & Tools (*C, Bash*), Intro. to Optimization (*MATLAB*), Intro. to Software Engineering (*Java, SDLC*), Computer Programming II (*Python, OOP*), Linear Algebra

TECHNICAL SKILLS

Programming Languages: Python, C/C++, Java, SQL, Bash, MATLAB, JavaScript

Frameworks & Libraries: NumPy, Pandas, scikit-learn, PyTorch, OpenCV, Flask, React, Flutter, HTML/CSS

Systems & Tools: Linux, Git, Docker, MySQL, MongoDB, Cloud Firestore, Arduino, Jetson Nano

PROFESSIONAL EXPERIENCE

Research Assistant

Jun 2025 - Present

Drexel University, Applied Symbolic Computation Lab

Philadelphia, PA

- Built and optimized C++ solvers for large-scale linear systems, reducing runtimes by 90% via matrix preconditioning
- Engineered a reproducible analysis pipeline with Python + Docker, automating probabilistic analysis on 1,200+ cases
- Delivered theoretical findings on linear algebra algorithms in collaboration with a professor and PhD researcher

Robotics Intern

Jun 2023 - Sep 2023

Fulbright University Vietnam, Makerspace

Ho Chi Minh City, Vietnam

- Developed autonomous trash-collector robot with ROS + Arduino, enabling precise navigation and obstacle avoidance
- Programmed trash detection with OpenCV and YOLOv5, achieving 3× speed via multithreading on Jetson Nano
- Established position estimation with OpenCV, achieving under 3cm localization error after camera sensor calibration

PROJECTS

Traffic Flow Optimizer | [GitHub](#)

Sep 2025 - Present

- Deployed real-time vehicle detection and tracking using YOLOv8 + DeepSORT, achieving 92% monitoring accuracy
- Forecasted city traffic flow using Random Forest, reducing prediction error to 3% across 10,000+ vehicle observations
- Optimized traffic light timing with graph-based linear programming, improving throughput and reducing congestion

The Triangle - Data Infrastructure Modernization | [GitHub](#)

May 2025 - Present

- Automated extraction, ETL, and SQL generation with Python to migrate legacy WordPress content into MariaDB
- Co-designed normalized MySQL schema from unstructured data, enabling fast queries and maintenance of 18K+ articles
- Coordinated with a 7-member team to build scalable, maintainable backend supporting operations of student newspaper

Drexel Diet - Personalized Nutrition Tracking App | [GitHub](#)

Jan - May 2025

- Led a 4-person Agile team to develop and deploy cross-platform Flutter app for nutrition tracking across 150+ dishes
- Built Flutter frontend pages and Dart scripts for interactive meal logging and personalized dietary goal calculation
- Implemented Firestore database for under 200ms syncing of user data and meal logs for personalized meal suggestions

LEADERSHIP & ACTIVITIES

Mathematics Teaching Assistant | Drexel University

Mar - Jun 2025

- Selected as one of only two freshman tutors; supported 25+ students and delivered 30+ hours of targeted tutoring

Lead Programmer, Vietnam Team | World Robot Olympiad

May - Nov 2022

- Directed programming of Vietnam's representative robotics team, placing 2nd nationally and in the top 25 globally