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 Software Engineering *(Java, SDLC)*, Computer Programming II *(Python, OOP)*, Intro. to Optimization *(MATLAB)*, 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 40% via matrix preconditioning
- Engineered a Python-based analysis and visualization pipeline, automating probabilistic analysis across 1,200+ systems
- Collaborated with a professor and PhD researcher to deliver theoretical findings on linear algebra algorithms

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 94% F1 score for monitoring
- Forecasted city traffic flow using Random Forest, reducing prediction error to 2% across 2,500+ 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

Embedded Math Tutor | *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