

# DANIEL VU

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## Education

**University of Minnesota Twin-Cities**

**Sep. 2023 – May 2026**

*Bachelor of Science in Computer Science — Minor in Management Information Systems*

*Minneapolis, MN*

## Relevant Coursework

- Algorithms and Data Structures
- Software Engineering
- Advanced Programming Principles
- Machine Architecture
- Machine Learning
- Program Design and Development
- Computing and Programming Concepts

## Technical Skills

**Languages:** C++, SQL, MongoDB, Python, Java, JavaScript, TypeScript, C

**Developer Tools:** Git, Docker, Jira, VS Code, Raspberry Pi OS

**Technologies/Frameworks:** Angular, React.js, Node.js, Express.js, Firebase Auth, Stripe, Tailwind CSS, MagicMirror<sup>2</sup>

**Cloud & DevOps:** AWS (S3, EC2, CloudFront, SES), Firebase Cloud Messaging, MQTT, Zigbee

**AI & Computer Vision:** OpenCV, TensorFlow, Facial Recognition, Machine Learning

**Software Engineering Concepts:** Object-Oriented Design, SOLID Design Principles, Algorithms and Data Structures, Prioritization Methods (MoSCoW), EARS Requirement Style, Gherkin Tests, RESTful API Development, IoT Integration

## Certifications

**TestOut PC Pro Certification (6-1C6-NH5VR):** Tested through simulations and exams for installing, repairing, configuring, and securing computer hardware/software and operating systems in home/corporate environments.

## Soft Skills

Communication, Critical Thinking, Attention to Detail, Project Management, Adaptability, Problem Solving, Collaboration

## Projects

**Tenant Management Website** | *Angular, Express.js, MongoDB, Firebase Auth, Stripe, AWS*

**GitHub Repository**

- Developed a full-stack application for managing rental properties, rent collection, tenant onboarding, and maintenance.
- Built the frontend using Angular and deployed it on AWS S3 with CloudFront for high-performance content delivery.
- Designed backend API with Express.js & MongoDB, hosted on AWS EC2, to handle tenant and property management.
- Implemented Firebase Authentication for secure user login and role-based access control (landlords, tenants, admins).
- Integrated Stripe for processing online rent payments, ensuring secure and efficient transactions.
- Developed a document storage system with AWS S3 for lease agreements and tenant records.
- Leveraged Firebase Cloud Messaging and AWS SES for sending real-time notifications and email alerts.

**Drone Delivery Simulation** | *C++, TypeScript, Jira, Docker*

**Docker Repository**

- Developed a drone delivery simulation in an agile environment, utilizing Jira for task tracking, and collaboration.
- Implemented backend pathfinding in C++ and integrated 3D assets while developing frontend in TypeScript.
- Incorporated features like recharge stations, a battery management system, and real-time data collection.
- Designed system architecture utilizing design patterns (decorator, factory) to ensure scalability & maintainability.

**Smart Mirror System** | *Raspberry Pi, Python, OpenCV, TensorFlow, MQTT*

**GitHub Repository**

- Developed an interactive smart mirror with real-time updates, AI-driven personalization, and IoT home integration.
- Implemented facial recognition using OpenCV and TensorFlow, enabling user-specific dashboard and recommendations.
- Integrated voice and gesture controls using MQTT and Raspberry Pi sensors for a seamless hands-free experience.
- Designed modular architecture supporting weather updates, news feeds, and IoT device management.

## Experience

**Tech Academy**

**Apr 2024 – Present**

*STEM Teaching Assistant*

*Little Canada, MN*

- Prepared computer science course materials, guiding students in robotics and virtual reality coding projects.
- Coached students in assembling and troubleshooting robots, improving their understanding of robotics by 70%.
- Led workshops that introduced 100+ students to virtual reality development, resulting in a 90% project completion rate.