

ETHAN KIM

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EDUCATION

Bachelor of Computer Science & Minor in Statistics

Expected Spring 2029

University of North Carolina at Chapel Hill

Associates in Arts

May, 2026

Guilford Technical Community College

Java Programming Certification

December, 2025

Guilford Technical Community College

TECHNICAL SKILLS

Languages: Java, Python, JavaScript/TypeScript, HTML/CSS, Lua

Frameworks & Libraries: FastAPI, React/Next.js, Flask, WebSockets, SocketIO, OpenCV, YOLO

Robotics: Kalman Filters, Control, Mapping, Motion Planning, Inverse Kinematics, Computer Vision

Hardware: NVIDIA Jetson, Arduino, Realsense Depth Cameras, RTK GPS, Lidar

WORK EXPERIENCE

NC A&T CLAEM Internship - Intern

June, 2026 - August, 2026

Tasked with developing autonomous capabilities intended for agriculture use on a Pioneer 3-DX chassis.

- Python, TypeScript, HTML, CSS, FastAPI, React/Next.js, WebSockets, YOLO AI
- Developed autonomous navigation software for mobile robots using LIDAR, depth cameras, and RTK GPS.
- Designed Kalman filter sensor fusion integrating RTK GPS, IMU, and wheeled odometry for outdoor localization.
- Combined LiDAR and depth camera perception with localization to create a real-time obstacle map, then used the Dynamic Window Approach for obstacle avoidance.
- Built a full-stack robot control and telemetry interface using FastAPI, React/Next.js, and WebSockets.
- Trained and integrated YOLO object detection models and implemented inverse kinematic control for robot arm use.

PROJECTS

Undertale Fighting Game - Creator & Programmer

March, 2022 - Present

- Lua, Roblox Studio
- Created and programmed a Roblox multiplayer game with 6M+ visits and 2M+ unique users
- Designed gameplay systems, movement, VFX, interfaces, and everything interactive.

FIRST Tech Challenge (FTC) Team 10195 - Lead Programmer & Captain

May, 2024 - June, 2026

- Java, Android Studio, Robotics Competition
- Led software development for competitive FTC robots, developing autonomous pathing, PID Control systems, and sensor fusion for localization.
- Used Kalman Filters to combine global AprilTag position estimates and local dead-wheel odometry + IMU position estimates to achieve real-time localization.
- Achieved the NC State record for Autonomous Offensive Power Rating in the 2024 - 2025 season
- Won the team's first competition since 2017 in the 2025 - 2026 season.

LEADERSHIP

YB Champions Taekwondo - Instructor

August, 2022 - August, 2026

- Led class and instructed students of all ages for over 3 years, 1000+ hours

ECG Robotics Programming Camp - Host/Leader

Summer, 2025 & Summer, 2026

- Hosted and led a 5 day long programming camp that taught rookie members (from multiple schools, 7th to 10th grade) how to code in Java and some basic robotics concepts.

ADDITIONAL INFORMATION

- Portfolio: <https://ethankimufgonline.com>
- Handshake: <https://unc.joinhandshake.com/profiles/pmsqc2>
- LinkedIn: <https://www.linkedin.com/in/ethan-kim-590275394/>
- Github: <https://github.com/DoctorKrill08>