

NOAH HATHOUT

nhathout11@gmail.com | +1 (704) 777-7361 | noahhathout.com | linkedin.com/in/noah-hathout/ | github.com/nhathout | Boston, MA

EDUCATION

M.S. in Robotics & Autonomous Systems (R&AS), Boston University Expected May 2026

B.S. in Computer Engineering, Boston University | (GPA: 3.73 / 4.0) May 2025

Concentration: Machine Learning Dean's List

RELEVANT COURSES

Robotics & Autonomy

Intro to R&AS
Robot Motion Planning
Robot Learning
Smart (Embedded) Systems

Machine Learning & AI

Applied Machine Learning
Deep Learning
Reinforcement Learning
Intro to Machine Learning

Systems & Design

Product Design in ECE
Control Systems
Software Engineering Principles
Applied Algorithms

SKILLS

Programming Languages: Python, C, C++, C#, Java, JavaScript, MATLAB/Simulink, SQL, HTML/CSS

Frameworks & Libraries: FastAPI, TensorFlow, PyTorch, OpenAI API, ROS, ROS 2

Databases & Data: SQLite, SQLAlchemy, Persistent JSON

Robotics & Embedded: Arduino, ESP32, Raspberry Pi, NVIDIA Jetson AGX Orin, UR5e/UR103 robotic arms

Simulation & Perception: NVIDIA Isaac Sim, nvblox, Visual SLAM, Intel RealSense & Orbbec SDKs

DevOps & Testing: Git, GitHub, Docker, Github Actions CI/CD, pytest

Networking & Concurrency: TCP/IP sockets, IoT protocols, Multithreaded Design


CAD & Tooling: OnShape, Bambu Lab, Ultimaker Cura, ESP-IDF

Operating Systems: Ubuntu Linux, Windows 10/11, macOS

EXPERIENCE

Research and Development Intern

Odense, Denmark

Universal Robots 

May 2024 - Sep 2024

- Led a high-impact computer vision project in the Innovation Lab integrating depth-sensing cameras.
- Developed real-time robotics software using ROS2, C++, Python, NVIDIA libraries, and Docker.
- Collaborated daily with fellow developers, merging code via Bitbucket, documenting tasks in JIRA, and resolving debugging challenges.
- Delivered a final demo showcasing future product capabilities and advanced vision-based robotic applications.

Teaching Assistant (EK131)

Boston, MA

Boston University, College of Engineering

Jan 2023 - May 2023

- Coordinated class supplies and administered two weekly office hours for student support.
- Built and maintained numerous Ender-3 V2 3D printers, facilitating 3D-printed parts for student projects.
- Managed on-demand print requests, ensuring timely and accurate 3D modeling support.

PROJECTS

Pollux - Senior Design Project (EC463/464)

Sep 2024 - May 2025

- Designed and built a ROS 2-based mobile robot that disinfects surfaces with UV-C LEDs while avoiding obstacles and cliffs.
- Crafted a custom PPO reinforcement learning reward structure achieving 60%+ coverage without edge violations.
- Integrated ultrasonic and IMU sensors into a real-time perception stack; deployed fully on a Raspberry Pi 4B.
- Collaborated with a cross-functional team to iteratively refine hardware design, motion control, and policy training for robust performance.

Smart Home API Core - Software Engineering Principles (EC530)

Jan 2025 - Apr 2025

- Architected a FastAPI-based RESTful API for managing users, houses, rooms, and IoT devices with JSON persistence; 100% server-side validation and typed data models.
- Implemented 100+ unit & integration tests with pytest, reaching 95% code coverage (completely automated).
- Designed a custom exception hierarchy to provide consistent error responses for conflicts and validation fails.

ChatSheetsAI- Natural-Language Spreadsheet Analytics (EC530)

Feb 2025 - May 2025

- Built a CLI tool that loads any CSV into SQLite, infers schema, and converts conversational questions into SQL via OpenAI, returning tabular results.

- Added an interactive conflict-resolution workflow that renames or merges columns when incoming CSVs differ from existing tables; demonstrated system on finance datasets.

SuperTuxSmart - Reinforcement Learning Final Project (EC418) Sep 2024 - December 2024

- Implemented distance-based reward shaping strategies in a MarioKart emulator (PySuperTuxKart), upgrading lap completion to 99%.
- Produced a comparative study of reward strategies, training curves, and generalizations across tracks.

PyP2PChat - Peer-to-Peer Encrypted Messenger Feb 2025 - Mar 2025

- Engineered a pure-Python chat application where each node acts as both a client and a server, enabling fully private and encrypted messaging without a broker.
- Utilized threading to handle simultaneous send/receive and logged all messages to local SQLite with timestamps for history logging and replication.

AreYouTrieuly...NET - Deep Learning Final Project (EC523) Feb 2024 - May 2024

- Adapted Meta's Detectron2 for facial attention detection; combined COCO instance segmentation and custom supervision to measure engagement in live frame or video streams.

PIRA (Personal Indoor Robot Assistant) - Smart Systems (EC444) Sep 2024 - December 2024

- Developed a headless firmware in C on an ESP32 (RTOS-based) for real-time control of sensors and actuators.
- Implemented an OptiTrack-based positioning system for autonomous navigation and manual WASD control.
- Deployed a Node.js server to coordinate data across multiple robots, with a Streamlit 2D visualization and TingoDB for real-time logging.
- Applied distributed systems principles (client-server communication, fault tolerance, security) via I2C, UART, and Wi-Fi integration

Additional Projects: *MATLAB Gentrification Analyzer* (EK125), *SitDown Reservation App* (EC327), *Digital Thermometer Prototype* (EK131), *Truss Stress Analyzer* (EK301), *Smart Bike Light* (EK201), *RedLight.link*

AFFILIATIONS

Member of IEEE		BU Intramural Tennis		BU Intramural Indoor & Outdoor Soccer
----------------	--	----------------------	--	---------------------------------------