Charles Hodgins

New York, NY | 917-837-6441 | c3hodgins@gmail.com | www.linkedin.com/in/charleshodgins | charles-hodgins.vercel.app

EDUCATION

Master of Science in Electrical and Computer Engineering *Expected May 2026*
Binghamton University, State University of New York
Bachelor of Science in Computer Engineering *May 2025*
B*inghamton University, State University of New York*
Cumulative GPA: 3.54/4.00
Relevant Coursework: Digital Systems Design, Data Structures and Algorithms, Operating Systems, Machine Learning, Neural Networks and Deep Learning, Detection Theory

TECHNICAL SKILLS

Programming: Python (pandas, scikit-learn, pytorch), C/C++, JavaScript(Node.js, React.js), Bash, Matlab
Development Tools: Git/Github, Linux Os, Windows, Visual Studio, Arduino

PROFESSIONAL EXPERIENCE

Software Engineer Consultant - Autonomous Race Car, *Lockheed Martin* | Vestal, NY *August 2024 - May 2025*
- Achieved 8+ feet/s autonomous navigation by developing separate pytorch perception models including a camera CNN for tape-track following and a LiDAR model for walled-course navigation, running ROS2 on an NVIDIA Jetson Orin Nano
- Engineered ROS2 data pipeline that automated collection and labeling of 200,000+ image/LiDAR training samples, enabling machine learning model deployment
- Successfully completed over 20 autonomous laps without leaving the track at design exposition demonstration

Research Intern, *Binghamton University* | Vestal, NY *April 2024 - August 2024*
- Designed a system to rapidly collect 3-channel accelerometer data, enabling real-time motion analysis
- Programmed a custom Arduino script that enabled microcontrollers to transmit precise PWM signals from RC car motors, automating the collection of training data for remote autonomous control of racing robot

Undergraduate Course Assistant, *Binghamton University* | Vestal, NY *January 2024 - May 2024*
- Assessed and guided students in EECE 287 Sophomore Design, an introductory class in embedded computer systems
- Aided in instructing class of more than 120 computer engineering students to reinforce material from lecture and lab
- Conducted student code reviews to over 20% of the class to supply feedback and help students improve coding practices

PROJECT EXPERIENCE

Next.js Portfolio Website *March 2025*
- Built a responsive fullstack website with Next.js, Supabase and Vercel to showcase engineering projects and streamline professional networking
- Designed interactive UI/UX elements including a lightweight MNIST classifier to increase engagement, and user input to send feedback on website features to the PostgreSQL database
- Structured content to highlight technical depth with direct links to codebases, demos, and technical write-ups

Metal Detector Embedded System *April 2024 - May 2024*
- Implemented a comprehensive data processing algorithm for a metal detector system, streamlining magnetic sensor data analysis; quantified the sensor readings with 3 separate metrics
- Created a softcore processor in Xilinx Vivado, and wrote C program to distinguish between different thresholds of magnetic field strength, correctly identifying magnetic field strength with 93% accuracy

LEADERSHIP & INVOLVEMENT EXPERIENCE

Binghamton Rover Team - *Firmware Engineer* *May 2024 - May 2025*
- Created robust software solutions for the university's competition rover project, enhancing system reliability across multiple key functionalities utilized by team engineers.
- Program microcontroller boards to interface subsystems of rover network driven by Dart software on Raspberry Pis

Binghamton Skate Club - *Vice-President* *August 2023 - Matt 2025*
- Collaborated with campus services to grow a 250+ member roller sports community for athletes of all skill levels.
- Campaigned to the club university financial committee to secure hundreds of dollars in funding and a designated skating space on campus

Private Physics & Calculus Tutor *August 2023 - May 2024*
- Engaged with 5 peers individually to enhance understanding and performance in general physics and calculus classes
- Produced personalized study guides based on lesson plans and homework assignments to increase in exam performance in all 5 peers