Charles Hodgins

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

EDUCATION

Binghamton University, State University of New York, Thomas J. Watson College of Engineering and Applied Science
Bachelor of Science in Computer Engineering *May 2025*
Cumulative GPA: 3.54/4.00 | **Dean's List:** Spring 2022, Spring 2023
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++, Matlab, JavaScript(Node.js, React.js), Bash
Development Tools: Git/Github, Linux Os, Windows

PROFESSIONAL EXPERIENCE

Software Lead, F1Tenth Autonomous RC Race Car, *Lockheed Martin* | Vestal, NY *August 2024 - May 2025*
- Achieved 8+ fps 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

Research Intern, *Binghamton University* | Vestal, NY *April 2024 - August 2024*
- Designed a system to rapidly collect 8-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, boost amount of training data for analysis and ML algorithm by 100%

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

Personal Next.js Website *March 2025*
- Built a responsive 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
- 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 - Present*
- 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 - Present*
- 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

WORK EXPERIENCE

Orsay Restaurant, *Server* *June 2022 - August 2024*
- Prepared the restaurant for service, provide professional hospitality to more than 100 guests at a time
- Developed and delivered a comprehensive menu presentation that highlighted key culinary trends and customer preferences based on a menu with 6 rotating special courses per week