Noah Wiley

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EDUCATION

Massachusetts Institute of Technology (Class of 2026) Cambridge, MA

- Candidate for Bachelor of Science in Electrical Engineering and Computer Science
- *GPA:* 5.0/5.0 | *Relevant Coursework:* Design and Analysis of Algorithms, Digital Systems, Dynamics and Controls, Circuits, Signal Processing, Efficient Deep Learning (G), Sensorimotor Learning (G), Software Construction, Probability, Statistics

WORK EXPERIENCE

Ultra-Efficient Robotic Perception and Planning, MIT LEAN Cambridge, MA
Undergraduate Researcher under Professor Vivienne Sze and Professor Sertac Karaman *May 2024 – Present*

- Reduce computation for motion planning and perception by designing selective and probabilistic dynamic map algorithms
- Achieved full native support for all dependencies and eliminated connectivity issues; modularized codebase leveraging Docker
- Developed remote compute and vision stack with TCP/IP, enabling intensive autonomy processes on ultra-low power robots
- Verified and documented systems; seamlessly integrated energy efficient motion planning, SLAM, and depth estimation

Co-Founder of KoolYard San Francisco, CA
Social event planning platform connecting event planners with vendors and caterers *January 2024 – Present*

- Develop and advise product strategy, business development, and technical architecture ensuring timely launch of MVP
- Identify applications for machine learning to increase user engagement and pinpoint inappropriate content
- Conduct student outreach and user testing to make rapid modifications and development

Machine Learning Teaching Cambridge, MA and Como, Italy
MIT Intro ML Learning Assistant and Italian High School Teacher *January 2024 – Present*

- Tutor machine learning subjects for students from MIT, Harvard, and international schools individually and in groups
- Prepare, refine, and teach coursework individually and alongside professors, cultivating encouraging learning environments

RFID SAR Micro-Localization, MIT and Cartesian Systems Cambridge, MA
Undergraduate Researcher under Professor Fadel Adib *September 2023– May 2024*

- Increased scan speed by 40%; developed linear decoding algorithm and embedded controls for RFID Synthetic Aperture Radar
- Coordinated real-time interactions between RPi, synthesizers, ADCs, and other SPI hardware with STM32 and C/C++

Generative AI and Counterfactuals, MIT MechE Cambridge, MA
Undergraduate Researcher under Professor Faez Ahmed *February 2023 – September 2023*

- Developed AI pipeline for ASME conference demo and paper with TensorFlow and YOLO CV to generate bike CAD designs
- Reduced CFD simulation runtime by 10^5 with 95% accuracy; trained, analyzed, and optimized 20+ architectures as surrogates
- Identified and integrated key ergonomic parameters from literature and experience to improve quality of generated designs

Electric UTV Conversion San Francisco, CA
Head of Management and Engineering *June 2021 – March 2022*

- Converted utility vehicle from combustion to electric power (22hp to 42hp) satisfying all sponsor's requirements
- Interviewed potential sponsors, secured funding and workspace, advertised project, and assembled a dedicated team
- Coordinated subteam projects and trained members on CAD, welding, soldering, CAN bus, and command line interfaces

R&D for Local Business San Francisco, CA
Design and Prototyping Engineer *Spring 2018 – Winter 2018*

- Designed and manufactured 3D printable components for bag locking mechanism still used today in high-theft areas

TECHNICAL PROJECTS

Custom Processor *Summer 2023 – Winter 2023*

- Designed processor from scratch and reduced clock time by 50% experimentally and with pipelining
- Created ALU, shortened critical paths, and optimized memory accesses with Minispec HDL (VHDL inspired) and RISC-V

Club Lighting *Summer 2023 – Present*

- Designed and manufactured custom lighting system using ESP32/8266, RaspberryPi, router, and addressable LEDs
- Enabled reliable wireless communication in high traffic settings via UDP with C/C++ libraries and open source software

Electric Vehicles and Lithium Batteries *Summer 2017 – Present*

- Design and construct electric vehicles and protected lithium battery packs with capacities from 1 Wh to multiple kWh
- Previous electric vehicles include: 2 Electric Skateboards, 2 Electric Bikes, 1 Motorized Cooler, 1 Reverse Engineered Scooter

3D Design, Arduino, and Manufacturing *Summer 2016 - Present*

- Use Fusion360, 3D printing, and other methods to model and manufacture single and multi-component assemblies
- Integrate and program Arduino boards into musical instruments, security systems, and IoT systems

SKILLS AND INTERESTS

- **SKILLS:** Robotics, Deep Learning, Verilog, FPGA, cocotb, Python, C, C++, Typescript, Git, Linux CLI, PyTorch, TensorFlow, Rapid Prototyping, Arduino, SPI, I2C, Soldering, Oscilloscopes, Logic Analyzers, CAD, Battery Systems, Mandarin
- **INTERESTS:** Tutoring, Photography, Drones, Wake Surfing, Road Biking, Delta Tau Delta, Espresso