Maxim Veksler

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Education

University of Pennsylvania — Philadelphia, PA

Bachelor of Science in Engineering (Electrical Engineering) — *Aug. 2024 – May 2028*

- Relevant Courses: Programming Languages and Techniques (CIS 1200); Bits, Circuits, and Systems (ESE 1110); Multi-variable Calculus (MATH 1410); Entrepreneurship (MGMT 2300); Microeconomics (ECON 0100)

Cherry Hill High School East — Cherry Hill, NJ

High School Diploma, 4.0/4.0 UW, 7.0/7.0 W GPA, Valedictorian — *Sep. 2020 – June 2024*

- Activities: Physics Club (President), Computer Science Club (President), VEX Robotics, Science Olympiad Club (VP), ESL Club (President/Mentor), Bridge Tutoring

Experience

Nanotechnology Researcher — March 2023 – Present

Johnson Nanotechnology Lab — *Philadelphia, PA*

- Designed a portable multi-channel high-speed electrical measurements system for the characterization of graphene-FET biosensors; optimized sensor performance to improved sensitivity and signal to noise ratio
- Selected and built hardware components to fit system size and budget constraints
- Created software to automate data collection and analysis (Python: Numpy, Pandas, and Matplotlib)

Electrical Hardware Engineer — September 2024 – Present

Penn Electric Racing — *Philadelphia, PA*

- Collaborated with a cross-functional team to design and integrate electrical subsystems
- Designed and manufactured brake sensor plausibility device (BSPD) circuit

Research Scholar — June 2023 – August 2023

Rutgers NJ Governor's School of Engineering and Technology (GSET) — *New Brunswick, NJ*

- Researched up-conversion of waste plastics in Polypropylene-Derived Luminescent Carbon Dots
- Created automated scripts for running and analyzing photo-luminescence spectroscopy measurements

Honors and Publications

- Chosen as 1 of 2 nominees from a class of 530, competing with all NJ nominees for 1 of 72 scholar places for a full scholarship at NJ Governor's School of Engineering and Technology Program (GSET)
- Co-authored research paper titled "Polypropylene-Derived Luminescent Carbon Dots," published in IEEE MIT URTC proceedings and in ACS Materials Letters (2024)
- Presented research paper titled "Conversion of Polypropylene Plastic Waste to Luminescent Carbon Dots" at MIT URTC and GSET Symposium (2023)

Selected Hobby Projects (see more at github.com/agentmax05)

RPi Self-Balancing Bot | *C++, Raspberry Pi, PID control, Circuit Design*

- Built a two-wheeled self-balancing robot with IMU and motors, including circuits and PCBs
- Implemented PID response loop on Raspberry Pi Pico microcontroller programmed in C++
- Created C++ library for easy control of robot subsystems (sensors, motors, lights)
- Integrated hardware components including motor controller board and sensors onto a custom PCB

Chat App | *Node.js, Express.js, Socket.io, Flask, MongoDB, JavaScript, Python*

- Developed real-time chat application using Express.js and Node.js backend and MongoDB for persistent storage
- Integrated Socket.io for bi-directional, event-based server-user communication
- Designed user authentication system with user registration and login ensuring secure access
- Set up and deployed Akamai Linux cloud server to host webapp and MongoDB database using Nginx

Technical Skills

Languages: Java, Python, C/C++, SQLite, MongoDB, JavaScript, HTML/CSS, OCaml, LaTeX
Web Development: Node.js, Express.js, Flask, Nginx, Selenium, Django
Spoken Languages: English (Native), Russian (Native), French (Proficient)
Software Tools: Git, OriginLab, Solidworks, Fusion 360, Altium Designer, Adobe Creative Suite
Electronics: Microcontrollers (Arduino, Raspberry Pi, etc.), circuit and PCB design, soldering, prototyping