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; Bits, Circuits, and Systems; Multi-variable Calculus; Entrepreneurship; Microeconomics

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 mobile high-speed current-voltage measurement system for the characterization of graphene-FET biosensors
- Collaborated with PhD students and faculty to optimize sensor performance, resulting in improved sensitivity and reduced noise in biosensor readings.
- Selected, built, and created components to fit system size and budget constraints
- Created software to collect, graph, and analyze sensor data in Python 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
- Learned circuit and PCB design/analysis

Scholar and Published Researcher June 2023 – August 2023

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

- 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 for research and academics
- Researched and wrote paper on "Polypropylene-Derived Luminescent Carbon Dots," accepted for publication in IEEE MIT URTC proceedings; published in ACS Materials Letters
- Presented at MIT URTC and GSET Symposium
- Created automated scripts for running and analyzing photo-luminescence spectroscopy measurements

Projects

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