HENRY MAYER

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EDUCATION

Carnegie Mellon University *2023-2027*
Incoming Computer Engineering Student *GPA: N/A*
Purdue University *January 2022 - August 2023*
Non-degree Seeking Student, Computer Science *GPA: 3.88/4.0*
Courses: Discrete Mathematics, C Programming, Computer Architecture, Software Engineering, Multivariate Calculus, & Data Structures and Algorithms (In Progress)

LEADERSHIP & TECHNICAL EXPERIENCE

Mayer Studios May 2018 - Present
Co-Founder & Co-President *Global*

- Responsible for the design, implementation, and testing of the company's wearable product line
  1. Used Native JavaScript and Scalable Vector Graphics to generate on-wrist reactive user experiences
  2. Used PHP and MySQL to implement API services to drive data sources such as weather, image, and competition APIs
  3. Used OAuth 2 APIs for Google and Fitbit authentication and JSON APIs from DarkSky, HERE, and Google Maps
- Directed customer service, finance, and scaling of the business to five-figure annual revenue and customers in 90+ countries

BoilerTime January 2023 - Present
Algorithms Engineer *West Lafayette, IN*

- Served as Scrum Master, enforcing Agile methodologies and reporting to project stakeholders
- Designed and implemented the entirety of the proprietary optimization algorithm
  1. Researched optimization techniques including neural network, simulated annealing, & genetic algorithms
  2. Used Java to implement the genetic algorithm features such as cross-over, mutation, & loss evaluation; used gradient descent to track convergence to optimal solutions and terminate optimization after a minimum loss has been located
  3. Implemented a W3C compliant WebSocket in Java to transmit schedule data, status updates, and results; used a thread-based priority queue to schedule concurrent optimization requests
- Developed scraping software in node.js to acquire section data; developed RESTful API routes for user profile and schedule data accessing and storage

PROJECTS

Maps Collection, by Mayer Studios *2019 - Present*
Developed the maps collection, which uses Google Maps to present information about NearBy attractions and travel times to places of interest on FitbitOS smartwatches

A Computerized Simulation of Behavior of Ideal Gasses as they Appraoch Equilibrium *2021*
Used NumPy and PANDAS to display a cluster of particles and demonstrate their predict their actions via Newtonian motion

7400-Series & Arduino Projects *2021 - Present*
Used discrete logic gates and 7400-series ICs to build an Arithmetic & Logic Unit and traffic-light controller. Created numerous Arduino projects including a weather station an radio-entropy based true random number generator

C Systems Projects *2022 - Present*
Implemented a vector operations program in C; developed a command execution system that supports concurrent and iterative command execution from files or standard user input

TECHNICAL STRENGTHS

Programming Languages	C/C++, Java, JavaScript, Python, HTML/CSS, & Assembly (AArch and x86)
APIs	SQL, NoSQL (Firestore), NodeJS, VueJS, TailwindCSS, OAuth, & Google Maps
Tools	VIM, Bash, Git/GitHub, Docker, Microsoft Office, & LaTeX