Elia Doehler

New York, NY (no sponsorship needed, just 3 year OPT) – ed568@cornell.edu - linkedin.com/in/elia-doehler/ - github.com/primordialls - (669) 292-8944

EDUCATION

Cornell University (Cornell Tech)
Master of Engineering in Computer Science, GPA: 4.05 May 2025

Santa Clara University
Bachelor of Science in Mechanical Engineering |Dean's List, **GPA: 3.96** June 2024

Minors: Computer Science, Mathematics, Aerospace Engineering
Involvements: Tau Beta Pi Engineering Honors Society, Pi Tau Sigma, Mathematics Learning Center
Relevant Coursework: Probability and Statistics, Numerical Methods, Algorithms, Data Structures, Computer Vision, Applied ML

SKILLS

Programming Languages: Python, C++, C#, MATLAB, Swift, Rust, HTML, CSS, JavaScript, TypeScript, Java, (SQL, NoSQL, GraphQL, Go)
Technical: REST APIs, Django, Flask, React, Angular, Tailwind, Node, Airtable, Kafka, Docker, DynamoDB, Redis, Pytorch, Tensorflow, Pandas
Focuses: Functional Programming, Backend, Frontend, Full-Stack, Agile, QA, CI/CD, Machine Learning, Data Science, Gaming
Language: Fluent in English and German, conversational Spanish

EXPERIENCE

Santa Clara University Robotics, Research Assistant (Mechanical Swimmer Propulsion), Dr. O. Pak's Lab | Santa Clara, CA Sep 2022-Jun 2024

- Integrated electro-mechanical **hardware** and **software** components and developed robot behavior in **C++/Arduino**
- Applied interpersonal skills and problem-solving in a **team-based** cross functional environment using **Jira**
- Executed **iteration** and **optimization** for multiple generations of swimming robot prototypes using lifecycle management
- Conducted **fluid simulations** using StarCCM+ based on set criteria
- Increased robot **propulsion** speed by ~15% over 6 months through optimization techniques including **curve fitting**

Von Ardenne GMBH Mechanical Engineering / Technology and Application Intern | Dresden, Germany Jun 2022-Aug 2022

- Automated CAD process using **C++** script for repeated actions
- Simulated factory workflow using **SimPy**
- Managed project files and data in a **PLM** system (Siemens Teamcenter)
- Navigated **team-based** planning and conception of layout/functionality of components
- Gathered and organized data for new parts from **third-party** manufacturers

PROJECTS

Cai: Car Market Matching System (Flask, React, Azure, CSS, HTML, Javascript, Python, Docker) Sep 2024-Present

- Building **AI-Assisted** web matching system for people looking to purchase car
- Designed and developed an intuitive, user-friendly interface using **React** to support interactive car search and recommendation workflows
- Implemented **responsive design** principles to ensure seamless user experience across devices using **HTML, CSS, and JavaScript**
- Engineered **scalable backend services** using **Flask** to handle search queries, data processing, and API integrations
- Integrated **natural language processing (NLP)** techniques to interpret free-form text inputs and convert them into structured queries
- **Integrated OpenAI API** to process natural language inputs, enabling users to describe car preferences conversationally

ALGAE: Advanced Lakebed Guardian and Algae Eradicator (Python, C++, Arduino, LabVIEW) Sep 2023-Jun 2024

- Conceptualized, designed and built algae removal robot for harmful algal blooms in freshwater lakes
- Spearheaded **software development** aspect of project for all **communication** between rover and control center
- Developed streamlined **control scripts** and **UI** in Python for tank-like rover track control
- Leveraged low-level **serial communication** to create **~50% faster sensor** data pipeline than lab standard
- Established **UDP** video pipeline for low-latency **computer vision** aided live video stream using gstreamer
- Ensured estimated **$2000** monthly cost reduction for partners at Tahoe Environmental Research Center

Suits Dialogue Generator (Python, Pytorch, BeautifulSoup) *link* August 2023

- Extended code based on GPT-2 to generate dialogue from the show Suits
- Built web scraper using **Soup** library to compile database of Suits episode scripts
- Trained neural network on **CUDA** using Google Colab **T4 GPU** runtime
- Explored hyperparameter tuning for **10% faster training** while retaining generated text quality
- Investigated regularization techniques such as **batchnorm** and **dropout** to improve performance

LEADERSHIP

PI TAU SIGMA, Alpha Epsilon Chapter Jun 2023-Jun 2024
President

- Spearheaded engagement in Professional Mechanical Engineering Honor Society
- Increased membership by 63% over previous year by improving community outreach
- Hosted industry speaker talks and events for Mechanical Engineering Community at Santa Clara University