

Elia Doepler

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EDUCATION

Cornell Tech (Cornell University), New York, NY

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: C++, C#, Python, MATLAB, Swift, Simulink, HTML, CSS, JavaScript, TypeScript, Java, SQL, NoSQL, GraphQL

Technical: REST APIs, Django, Flask, React, Angular, Tailwind, Node, Azure, Firebase, Docker, Pytorch, Tensorflow, Pandas

Focuses: Functional Programming, Backend, Frontend, Full-Stack, Agile, QA, iOS, Machine Learning, Data Science, Gaming

Language: Fluent in English and German, conversational Spanish

EXPERIENCE

Santa Clara University, Research Assistant (Mechanical Swimmer Propulsion), Dr. On Shun 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)

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