Elia Doehler

New York, NY - ed568@cornell.edu - linkedin.com/in/elia-doehler/ - github.com/primordialls - (669) 292-8944

EDUCATION

Cornell Tech (Cornell University), New York, NY

Master of Engineering in Computer Science | GPA: 4.00

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 Honor Society, Pi Tau Sigma Honor Society, Alpha Sigma Nu Honor Society

Relevant Coursework: Probability and Statistics, Numerical Methods, Algorithms, Data Structures, Computer Vision, Applied ML

SKILLS

Programming Languages: C++, C#, Python, MATLAB, Swift, HTML, CSS, JavaScript, TypeScript, Java, SQL, NoSQL, Go, Rust Technical: REST APIs, Django, Flask, Next.js, Lambda, React, Tailwind, Docker, OpenAPI, Pytorch, Tensorflow, Pandas Focuses: Functional Programming, Full Stack, iOS, macOS, CI/CD, Agile, Machine Learning, Data Science, NLP, LLMs Language: Fluent in English and German, conversational Spanish

EXPERIENCE

Santa Clara University Robotics, Research Assistant (Mech. 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

AI Tanks (Reinforcement Learning) (C#, Python, Unity) link

Sep 2024-Dec 2024

- Led the design and execution of a multi-agent reinforcement learning (MARL) research project
- · Developed a top-down multi-agent 2D tank shooter game in Unity from scratch as a reinforcement learning environment
- Directed experiments to evaluate the comparative effectiveness of PPO and MA-POCA in heterogeneous agent teams
- Managed and analyzed the training process for both algorithms over 550,000 training steps
- Developed and refined evaluation frameworks to assess algorithmic performance, determining MA-POCA to have efficiency drawbacks
- Explored diverse reward structures fine-tuning reward dynamics to drive optimal agent behavior and coordination
- Collaborated with a cross-functional team to integrate findings into a comprehensive research paper

EBay ML Competition (Python, Jupyter)

Apr 2022-Nov 2022

- Developed Bi-Directional Recurrent Neural Network (BiLSTM RNN) for final Named Entity Recognition (NER) model after fine tuning
- Trained NN on handbag names to attempt to correctly assign parts of the names to categories
- Achieved F1 score of 0.88573 to rank 15th overall

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