KOERNER GRAY-BUCHTA

Ann Arbor, MI| P: +1 616-826-9948 | koernerg@umich.edu

EDUCATION

UNIVERSITY OF MICHIGAN Ann Arbor, MI
Bachelor of Science in Computer Science April 2025
Cumulative GPA: 3.0/4.0
Coursework: Artificial Intelligence, Evolutionary Algorithms, Complex Systems, Data Structures and Algorithms

SKILLS

PROGRAMMING LANGUAGES & FRAMEWORKS

- Python [Django, Flask, Numpy, Scipy, Matplotlib, OpenCV, Pytorch, Transformers, Langchain, Llama Index, Crew AI]
- C/C++[STL]
- Javascript [vue.js, jQuery, bootstrap]
- Git version control, Windows and Linux development

RESEARCH

- Computer Vision
- Data Science Visualization
- Transformers for Combinatorial Optimization
- LLMs

WORK EXPERIENCE

ITS GEN AI SERVICES, UM INFORMATION & TECHNOLOGY SERVICES Ann Arbor, MI
Computer Consultant July 2023 - October 2023

- Helped build UM's groundbreaking native generative AI services with langchain, django, and vue.js
- Added tested front-end features tracked with Jira in collaboration with UX/UI designers and cybersecurity team members

IMAGE-GUIDED MEDICAL ROBOTICS LAB, UNIVERSITY OF MICHIGAN Ann Arbor, MI
Research Assistant, I Jan 2023 – Present

- Collaborated with graduate students and professors to create an intelligent, Robotically-aligned OCT scanning system
- Created high-dimensional visualizations with matplotlib for conference and journal papers
- Optimized the regularly-called path-planner/TSP solver function for a speed-up of 26%, contributing to the project's 5x greater frame rate than standard OCT systems
- Trained a pytorch Transformers-based computer vision model on the University's Slurm cluster

IMRA AMERICA, INC Ann Arbor, MI
Production Engineer August 2022 - December 2022

- Built and tested hundreds of chirped pulse amplification components for femtosecond lasers used in medical devices
- Collaborated with IMRA's team of optical physicists, engineers, and technicians to boost production and document processes

UNIVERSITY PROJECTS

FOOD DONATION RAG BOT January 2024

- Built a prototype Llama-based Retrieval-Augmented Generation system to help address local food insecurity with Flask and Transformers

AI-BASED PDF SUMMARIZER March 2023

- Created a google Colab script that loads a PDF and summarizes it with an LLM

MUSICAL CELLULAR AUTOMATA SIMULATOR Jan 2022

- Designed and built an algorithmic composition script based on Conway's 'Game of Life' cellular automaton model using creative coding libraries for Javascript (p5Gibber) and Flask