ZACHARY DECKER

New York, NY | 714-475-8849 | zad25@cornell.edu
https://zacharydecker.com

EDUCATION

Cornell Tech (Cornell University), New York, NY — May 2025 (Expected)
Master of Engineering in Computer Science, GPA: 4.0
Relevant Coursework: Startup Studio, Deep Learning, Applied Machine Learning, Natural Language Processing

Rose-Hulman Institute of Technology, Terre Haute, IN — May 2024
Bachelor of Science in Computer Science and Software Engineering, GPA: 3.71
Relevant Coursework: Software Design, Web Development, Database Systems, Generative AI, Software Requirements Engineering

TECHNICAL SKILLS

Languages: Python, JavaScript, TypeScript, C++, SQL, HTML/CSS
Tools: PyTorch, Hugging Face, AWS, CI/CD
OS: Windows, Linux, UNIX

EXPERIENCE

DEKA Research & Development, Research Engineer, Manchester, NH — Fall 2022 - Spring 2024
- Researched, designed, and implemented robotics terrain mapping algorithms in Python and C++ to improve path planning
- Collaborated across teams to integrate systems and ensure reliability of production code
- Built documentation for complex technical systems used by both engineers and non-technical stakeholders

AON Devices, Engineering Intern, Irvine, CA — Summer 2022
- Built data pipelines in python for processing and analyzing large datasets from multiple sources
- Generated research reports on state of the art low-power transformer models

PROJECTS

PolyRook (JavaScript, Three.js, WebGL) — Winter 2024 - Present
Developed voxel-based AI 3D environment generator built on open-source JavaScript voxel editors
- Implemented ray tracing voxelization method, significantly enhancing visual fidelity
- Designed API integration layer connecting frontend editors with AI model generation services

AI Actual (TypeScript, Flask) — Spring 2024
Enhanced personal finance app with TypeScript frontend and Flask backend
- Implemented NLP-powered chat interface for natural language queries about financial data
- Developed custom API layer connecting frontend interface with the backend database structure and LLM models
- Compared different models and selected stack for low cost while optimizing functionality

Course Registration Chatbot (Python, LangChain, Node.js) — Spring 2024
Created AI chatbot for school-specific course registration information
- Tested various RAG methods and prompt engineering methods to maxixmize output quality
- Implemented event tracking and logging system to capture user interaction patterns for continuous improvement

Organize My Life (React Native, AWS) — Fall 2023 - Spring 2024
Developed cross-platform file organization app with React Native frontend and serverless backend
- Maintained reusable component design for consistency and extendability
- Built infrastructure using AWS Lambda, DynamoDB, and S3 for scalable storage
- Implemented CI/CD pipelines using GitHub Actions for automated testing and deployment
- Managed complete product lifecycle from initial architecture to production-ready application

PUBLICATIONS

Evolution of Developmental Strategies in NK Fitness Landscapes, Ashworth, J., Lee, Y., Shen, J., Kim, E., Decker, Z., & Yoder, J. (2022). ALIFE 2022: The 2022 Conference on Artificial Life, 59.
- Designed an abstract computational model integrating NK fitness landscapes with genotype-encoded developmental programs to simulate organism trajectories and developmental processes
- Presented findings indicating evolved developmental strategies mirror biological phenomena such as sensitive periods, providing insights into the evolutionary origins of complex developmental patterns