Hrishikesh Kalyanaraman

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Education

University of Illinois at Urbana-Champaign **Graduation: May 2025**

Bachelor of Science in Computer Science *GPA: 3.77/4.00*

Intelligence and Big Data Track, Minor in Computational Physics

Relevant Coursework

Algorithms(CS 374, CS 466), Systems Programming (CS 341), ML (CS 440, CS 446), Data Structures (CS 225), Probability and Statistics (CS 361), Linear Algebra (MATH 257), Differential Equations (MATH 285)

Skills

Programming Languages: Python, C++, C, Java, SQL, JavaScript, Shell, YAML, React, Typescript, Tailwind CSS, NodeJS

Version Control: GitHub, GitLab, Bitbucket

Frameworks/Platforms: Linux, Docker, MS Office, MongoDB, GCP, Azure, REST API's, Langchain, Flask, Next.js, SQLite, PostgreSQL, AWS, FastAPI

Languages: Professional fluency in Tamil, Hindi

Work Experience

SWE Intern, Eli Lilly and Company | *RAG, AWS , PostgreSQL, Streamlit, FastAPI* **May 2024 - August 2024**

- Developed Retrieval Augmented based AI chatbot to create impact analysis on new release notes, reducing annual workload from 240 → 48 hours (80% reduction)
- Implemented multi-step authentication for chatbot, ensuring compliance and securing confidential medical data
- Optimized streamlit frontend implementing accessibility features and prompt selection drop-downs based on user testing
- Set up chatbot for deployment on internal kubernetes-based deployment tool ensuring scaling requirements, and created developer documentation
- Educated stakeholders on AI limitations, established feedback loops, contributed to project scope, and refined system architecture

Strategy Lead, Illini Solar Car | *Leadership, Algorithms, Library Development, Flask* **January 2022 - March 2024**

- Led 50-member cross-functional team in algorithm optimization, data analysis, and telemetry, utilizing AGILE to drive project success
- Developed and debugged python physics engine library using pdb, enabling integration of 3 new algorithms
- Implemented unit testing workflows to raise code standards, increasing pylint scores by 800%
- Refactored telemetry backend from JavaScript to Flask, reducing onboarding time by 25%

Software Intern, Optivolt Labs | *Linux, OpenCV, tkinter, Multi-processing, gspread* **June 2023 - August 2023**

- Designed UI in python to automate internal test logging via Google Sheets integration using Tkinter, gspread.
- Decreased testing costs by $25,000 through automation of test lighting procedures using PySerial, DMX Controller
- Doubled testing efficiency through automated temperature measurements using IR camera, Pyudev, OpenCV
- Enhanced internal testing library by adding support for external tools (lighting setup, IR Cameras, electronic loads)
- Analyzed solar panel efficiency trends for company and competitor panels

DevOps Intern, National Centre for Supercomputing Applications | *Github Actions* **June 2022 - Present**

- Created Continuous Integration workflows for the Einstein Toolkit using GitHub Actions
- Documented and adapted Einstein Toolkit testing framework for SelfForce-1D code infrastructure
- Developed Python script automating transfer of website design changes to all previous builds
- Working on paper on transferablility of testing frameworks

Projects

Sitafal

Personal Project | Next.js, Typescript, AWS, Vercel, ComfyUI, React, Stable Diffusion, Tailwind CSS

∗ Deployed full-stack web application using Next.js, React, Node, Typescript to accelerate conceptual design workflows by 10x
∗ Implemented custom image AI workflows on ComfyUI using fine-tuned machine learning models
∗ Created 3D models in OBJ format from single view images using custom AI workflows
∗ Onboarded 6 pilot users from industrial design firms, and received $2000 in grants

ChatCAD

Personal Project | RAG, Tkinter, OpenAI, Selenium, Langchain, ChromaDB, AI Agents

∗ Developed OpenSCAD and Fusion 360 add-ins using Langchain and GPT4 for text-to-CAD conversion
∗ Implemented Retreival Augmented Generation using a sentence transformer model, Chroma Vector database
∗ Increased accuracy 10x using few-shot prompting and Fusion 360 API embeddings scraped using selenium