

# Aditya Venkatesh

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## EDUCATION

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**University of Illinois at Urbana-Champaign, Urbana, IL, USA**

May 2026

*Bachelor of Science in Computer Engineering*

## EXPERIENCE

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**AI Intern**

June 2024 – Aug 2024

*SenseImage Technologies, Chennai, India*

- Prototyped an image segmentation application, collaborating with other startup members to define project scope and deliverables, and built a user-friendly Python GUI for high-throughput image processing.
- Custom-trained a VGG16-UNet model for object segmentation using OpenCV and TensorFlow.
- Automated batch analysis and accelerated segmentation by over 200x compared to the previous process while enhancing accuracy.

**Team Member - LLM Benchmarking Project**

March 2025 – May 2025

*AGI4Engineering Research Initiative, Prof. Bin Hu, UIUC*

- Co-developed EngDesign, an open-source benchmark for evaluating LLMs on real-world engineering design tasks spanning operating systems, hardware, robotics, and signal processing.
- Developed simulation-based validation and verification methods testing LLMs' abilities to generate functional designs for open-ended, practical engineering design tasks.
- Co-authored '*Benchmarking the Engineering Design Capabilities of LLMs*', NeurIPS 2025 – [arXiv](https://arxiv.org/abs/2508.12345)

## PROJECTS

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**LangGraph RAG Agent with Web Search** — [adityavenkatesh.com/chatbot](https://adityavenkatesh.com/chatbot)

July 2025 – Sept 2025

- Developed a full-stack RAG conversational agent with real-time web search using LangChain, later migrating to LangGraph to enable modular conversational flows with conditional logic.
- Implemented document retrieval and query processing pipelines with a Chroma vector database for efficient document retrieval, boosting answer relevance.
- Demonstrated advanced LLM orchestration skills through workflow design and optimization.

**UNIX Operating System for RISC-V** — [adityavenkatesh.com/unix-os](https://adityavenkatesh.com/unix-os)

March 2025 – May 2025

**FPGA Raycasting Engine** — [adityavenkatesh.com/raycasting](https://adityavenkatesh.com/raycasting)

May 2024

**16-bit RISC Processor** — [adityavenkatesh.com/risc-processor](https://adityavenkatesh.com/risc-processor)

March 2024

## LICENSES AND CERTIFICATIONS

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**Coursera Deep Learning Specialization** | *DeepLearning.AI*

Oct 2025

**Coursera Machine Learning Specialization** | *DeepLearning.AI*

Jun 2025

**AWS Certified Cloud Practitioner** | *Amazon*

Aug 2023

## SKILLS

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**Languages and Frameworks:** C/C++, Python, LangChain/LangGraph, LlamaIndex, TensorFlow, PyTorch, OpenCV, CUDA, NumPy

**Platforms and Services:** AWS, Microsoft Azure, IBM Watson, Vivado, Vitis

**Developer Tools:** Git, Docker