Vedaant Jain

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EDUCATION

Bachelor of Science: Computer Science & Mathematics	May 2026
University of Illinois at Urbana Champaign	IL

GPA: 3.98/4.00; Dean's List(2022-24)

PUBLICATIONS & PREPRINTS

Chaudhary I, Jain V, Singh G (2024). QuaCer-C: Quantitative Certification of Knowledge Comprehension in LLMs. **SeT LLM@ICLR 2024**, arXiv: 2402.15929 [cs.AI].

Jain V, Alves Feitosa F, Kreiman G (2024). Is AI fun? HumorDB: a curated dataset and benchmark to investigate graphical humor.arXiv: 2406.13564.

SKILLS & COURSEWORK

Python, C/C++, TypeScript, SQL, NoSQL, Rust, JavaScript, Verilog, OCaml

PyTorch, JAX, AWS, Git, CI/CD, Google Cloud, LLVM, MongoDB, Linux, HPC, Unity, DeepSpeed, TCP, React, Docker

Machine Learning(ML), Program Analysis, **Compiler Construction**, **Numerical Methods**, **Wireless Sensing**, Algorithms, Data Structures, **Computer Architecture**, **Computer Vision**, Embedded Systems, NLP

WORK EXPERIENCE

Metaphor Data Inc.	May 2024-Aug 2024
Software Engineering Intern	San Francisco, CA

- Developed comprehensive testing framework for **3 LLM and RAG pipelines** (search, automated descriptions, Slack bots), finding 2 bugs and improving performance by 20% with **MongoDB, TypeScript, Jest, CI/CD, AWS, Terraform**.
- Pioneered **first CLI tool** and **4 new API endpoints**, for **3 batch transactions across 5 data asset types** leading to increased efficiency by 10x. Used **GraphQL, Python, TypeScript**

Disruption Lab-UIUC	Aug 2022 - May 2024
Head of AI/ML(Aug 23-May 2024), Tech Lead(Jan 22-May 22), SWE(Aug 22-Dec 22)	Urbana, IL

- Led and collaborated across **10 AI project teams** with **100+ students** for clients including **AMD**. Projects spanned **LLM-guided web crawling, virtual classrooms, chatbot development, and malware detection** with success rate of 91%
- Worked with **PyTorch DDP** for distributed training on **AWS SageMaker**; used **hardware counters** for **malware detection**.

Focal Lab - UIUC	Aug 2023 - Present
Undergraduate Researcher	Urbana, IL

- Novel **Certification on Reasoning using Knowledge Graphs for Large Language Models(LLMs)**. arXiv: 2402.15929 [cs.AI].

Kreiman Lab - Harvard Medical School	June 2023 - June 2024
Undergraduate Researcher	Boston, MA

- Introduced **Novel Dataset** on **humor detection** for **Vision and Vision-Language models** and gained experience with **DeepSpeed** and **Huggingface accelerate** for distributed model training and fine-tuning. arXiv: 2406.13564.

National Center for Supercomputing Applications - UIUC	Aug 2023 - May 2024
SPIN Intern	Urbana, IL

- Presented poster at the **NCSA student conference** on using **Diffusion Models and Inpainting** for **Parkinson's disease simulation** on facial features achieving improvement of **6%**.

UIUC TheorieLearn	Jan 2024 - May 2024
Software Developer	Urbana, IL

- **Full stack development** of **12 new resources** to aid learning in the **Algorithms class** at UIUC: https://theorielearn.github.io/.

PROJECTS

- **Multi-Modal Information Extraction (IE)** from structured resumes of academic scholars using a modular vision and language approach. https://github.com/Forward-UIUC-2023S/vedaant-jain-sectioning-info-extraction.
- Developed **AR app with Unity** using **CNNs** to identify and interact with **3D assets of surgical equipment** in real time on Android.
- Integrated **Curriculum Learning with Language models and RL** for **embodied planning**, boosting performance by **10%**.
- Built **iOS app** to aggregate the best thrifting deals at runtime from various websites using **Firebase and AWS** as backend. https://github.com/achand40/ReafBuild. Improved Shopping speed by 20%.
- Developed a **Neural Style Transfer web app** using **Rust** and **Convolutional Neural Networks**. https://github.com/DSS3113/Rust-Style-Transfer.