Adhitya Thirumala

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EDUCATION

University of Illinois Urbana-Champaign   Expected Graduation: May 2027
Major: Computer Science + Linguistics — Minor: Mathematics   *GPA: 3.82/4.0*

EXPERIENCE

Digital Main | *Machine Learning Intern*   May 2025 — August 2025
- Built an asynchronous agentic retrieval-augmented-generation (RAG) system in Python, orchestrating query decomposition and research across web and internal client data (Slack messages, emails, etc.) using LangGraph
- Utilized FastAPI to create customer-facing production API to stream research process to web client using Server Sent Events (SSE)
- Implemented automated agentic source validation, while integrating images and generating charts or tables into final artifact

University of Illinois Siebel School of Computer Science | *Course Assistant*   January 2026 — Present
- Selected to be an undergraduate course assistant for CS 225: Data Structures and Algorithms in C++
- Assisted students in understanding and learning data structures (graphs, trees, linked lists) through office hours, online forums, and lab sections

Assocation for Computing Machinery at Illinois | *Treasurer*   March 2025 — Present
- Managed over **$350k** of organizational funds for largest CS student organization at Illinois with **1000+** total members
- Migrated accounting and credit card platforms from BILL.com to Ramp to obtain credit limit increase of **2300%** and to streamline reimbursements, onboarding, and reporting workflows
- Served as liaison between organization and Siebel School of Computer Science staff to coordinate usage of department-provisioned funds for ACM events such as biannual open house (**500+ attendees**) and various social events

Freelance | *Private Policy Debate Coach*   August 2024 — Present
- Mentored **9** students from under-resourced institutions nationwide, identified through extensive high school competitive debate networking, providing coaching and research skills

SELECTED PUBLICATIONS

Clickbait Classification and Spoiling Using Natural Language Processing (arXiv)   Oct 2022 — May 2023
- Trained transformers-based models on shared task dataset for clickbait detection
- Performed comparative analysis between fine-tuned SLM BERT-based models and Large Language Models on clickbait spoiling task
- Utilized Weights and Biases hyperparameter tuning to achieve ∼**80%** accuracy on shared task
- Results accepted by *The 17th International Workshop on Semantic Evaluation*: Toronto, Canada 2023

Extractive Question Answering(QA) on Queries in Hindi and Tamil (arXiv)   Oct 2021 — May 2022
- Trained NLP models to perform extractive QA improving performance by **20%** over baseline due to modified RoBERTa tokenizer
- Utilized crosslingual dataset provided by competing in online competition hosted by Google
- Received 26th Annual Carnegie Science Award given to **12** top scientists, entrepreneurs, innovators and educators across the city of Pittsburgh for submitted research

PROJECTS

Oxeye | *Developer*   November 2025 — Current
- Built a real-time Minecraft-Discord player status bridge using async Rust (Axum, Tokio frameworks) and Java Fabric mod enabling Discord communities to monitor online players
- Engineered high-performance async architecture with lock-free concurrent caching and heap-free player-name storage, eliminating muxtex contention and heap allocation on high-throughput player events and decreasing disk read/write
- Designed hybrid persistence layer combining SQLite for durability with in-memory caching for sub-millisecond queries across multiple tenants with multiple linked servers
- Containerized and deployed to VPS on Oracle Cloud using Docker Compose to run in production

AWARDS AND COMPETITIONS

SIGPwny FallCTF: 6th Place (Advanced Track) in cybersecurity competition across **100+** teams from UIUC   September 2025

SKILLS

Languages: C++, Rust, C, Python, Java, HTML, Bash, LaTeX, SQL, Go, Lua, Javascript, Typescript, CSS, Verilog, MIPS Assembly
Tools: Linux, Git, Vim, Huggingface, Maven, Gradle, SQLite, Docker, Docker Compose, PostgreSQL, Vercel, AWS, Oracle Cloud, Google Cloud Platform, Cloudflare (Domain Management), Github Actions CI/CD, Ghidra
Libraries: pandas, NumPy, Matplotlib, Tensorflow, pyTorch, Sci-Kit Learn, Swing (Java), Spring (Java), Next.JS, React.JS, Flask, LangChain, LangGraph, FastAPI, Axum, Tokio

RELEVANT COURSEWORK

Computer Science: Algorithms and Models of Computation, Data Structures in C++, Computer Architecture, Computational Linguistics
Mathematics and Statistics: Honors Abstract Linear Algebra, Statistics and Probability I, Introduction to Higher Level Math, Multivariable Calculus, Discrete Structures