ADHITYA THIRUMALA

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EDUCATION

University of Ilinois Urbana-Champaign - Siebel School of Computer Science
Major: Computer Science + Linguistics, Minor: Mathematics   Aug 2024 – May 2027

EXPERIENCE

Cloudflare   May 2026 – Aug 2026
Incoming Software Engineering Intern   *Austin. TX*

Digital Main   May 2025 – Aug 2025
Machine Learning Intern   *Sunnyvale, CA*
- 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

Association for Computing Machinery at Illinois   Mar 2025 – Present
Treasurer   *Urbana, IL*
- 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 **2800%** and to streamline reimbursements, onboarding, and reporting workflows

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

PUBLICATIONS

Clickbait Classification and Spoiling Using Natural Language Processing (arXiv)
- 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)
- 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

PROJECTS

Oxeye (Github)
- 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 mutex 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 Infrastructure using Docker Compose to run in production

C Compiler (Github)
- Implemented C compiler (C17 Standard) in Rust with a 6-stage pipeline (lexer → parser → semantic analysis → IR → assembly generation → x86-64 code emission) targeting Linux and macOS
- Verified compiler against comprehensive test case suite of **400+** programs to test functionality

AWARDS AND COMPETITIONS

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

SKILLS

Languages: Rust, C++, C, Python, Java, HTML, Bash, LaTeX, Typst, 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, Cargo, Bun
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: System Programming, Computer Systems Organization (Graduate), Data Management in the Cloud, 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