Akhil Tadiparthi

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Summary:

First-year graduate student looking for enriching Computer Science opportunities. 3+ years of experience working in Full-Stack and Backend development, and 1+ years of experience working in Machine Learning/Deep Learning model development. Diverse skillset and expertise in programming languages, database systems, ML frameworks, and cloud technologies. Looking for experiences that further my drive in software development in Full-Stack, Backend, ML frameworks, and cloud environments. I am highly motivated to devote my time to mastering new technologies and expanding my current skillset.

Education:

The University of Colorado, Boulder — Aug. 2023 - May 2025
M.S. Computer Science

Core Skills:

Programming Languages/Frameworks: C#, C++, Python, MySQL, PostgreSQL, React, Flask, Min.io, JavaScript, HTML/CSS, Scala, TensorFlow, Scikit-learn, PyTorch, NumPy, Pandas
Tools: Kubernetes, Docker**,** NodeJS, AWS Cloud: EC2/Lambda/DynamoDB/S3, Git, JIRA, Microsoft Office

Certifications:

AWS Certified Developer - Associate (2022), Kaggle Pandas Certification (2023), Kaggle Python Certification (2023), Kaggle Advanced SQL Certification (2023), Kaggle Computer Vision Certification (2023)

Professional Experience:

- **Blueprint Software Intern:** *Boulder County Nature Association* — Oct. 2023 - Present
  - Developed an intensive wildlife database utilizing OpenAI API to populate wildlife photos/characteristics using Django/SQL frameworks
  - Restructured the current database and developed a new data model for *10x* faster database performance using partitioning, indexing strategies
  - Developed a keyword search engine to populate the webpage with information in a hierarchical view/most relevant results based on input
  - Utilized TailwindCSS and React to develop front-end display components for the Boulder County Nature Association website
- **DevOps Developer:** *University InformationServices* — May 2023 - Jan 2024
  - Maintained CU's end-to-end enterprise integrations utilizing GraphQL, promptly developing fault-tolerant systems
  - Responsible for accurately migrating git projects from Stash and other legacy repositories to GitLab, reducing operation time
  - Developed CI/CD automation, and implemented ways to automate and improve the development time using Python and Java
- **GLEE Mission Software Intern:** *Colorado Space Grant Consortium - NASA* — Jun. 2022 - Aug. 2022
  - Developed the software for GLEE's custom microcontroller designed to collect and transmit data while on the lunar surface
  - Optimized code in C++ to *increase efficiency* and onboard memory space to allow for more data collection on the satellite by *100x*
  - Developed an interactive model of all the sensors using Python & Matplotlib to model the power consumption of the microcontroller based on the configuration of the various on-board sensors and ICs
- **Course Assistant:** *CSCI 3104 - Algorithms* — Aug. 2022 - Dec. 2022
  - Duties included helping students understand the fundamentals of algorithms and various algorithmic strategies, including time and space complexity, sorting algorithms, divide and conquer algorithms, greedy algorithms, etc.

Academic Projects:

- **File De-Duplication System:** *Full-Stack Development* — Aug. 2023 - Dec. 2023
  - Developed a Data De-Duplication service that efficiently identifies and manages/discards the redundant data using a file checkSum technique
  - Utilized React for Frontend and Flask for Backend APIs, connecting to Min.io cloud storage and MySQL(All services hosted on Kubernetes)
  - Implemented an algorithm for Min.io cloud storage and MySQL to work hand-in-hand to efficiently identify *100%* of the duplicate data
  - Deployed these independent services in a Kubernetes cluster that can be scaled out on a multi-node environment; The components are run in Kubernetes pods abstracted as a NodePort service for external access with auto-scaling mechanisms such as Horizontal Pod Autoscaling
- **English Sarcasm Detection using RoBERTa:** *Natural Language Processing Model Development* — Jan. 2023 - May 2023
  - Developed a transformer deep learning model for text classification using the RoBERTa architecture to determine sarcastic text
  - Neural network with 2 dropout layers and a dropout rate of 0.3, 2 linear layers, and 1 normalization layer with tanh(x) activation
  - Fine-tuned the model for transfer learning with an additional pre-training phase that *significantly improved* the F1 score from *0.8 to 0.93*
- **Around the World in 80 Days:** *Full-Stack Development* — Jan. 2022 - Dec. 2022
  - Developed a web application to display location characteristics such as food, attractions, music, and *live* news for major cities of the world
  - Frontend development utilizing HTML/CSS and implemented an SVG layer for an interactive world map for users to select the major cities
  - Utilized NodeJS and Javascript(jQuery) to invoke asynchronous API calls such as AJAX using the Express() framework
  - Implemented PostgreSQL on Docker containers for database storage, user registration & preferences, authentication/authorization
  - Hosted the application in the AWS cloud using EC2, S3, and RDS; attached an application load balancer to my Route53 domain