

# Akhil Chilumuru

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## EDUCATION

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### Texas A&M University, College Station

Master of Science in Computer Science, **GPA: 3.9/4.0**

Texas  
August 2022 - May 2024

### Indian Institute of Technology, Madras

B.Tech. in Electrical Engineering, **GPA: 8.05/10.0**

India  
August 2014 - May 2018

## TECHNICAL SKILLS

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**Programming:** Python, Java, Javascript, Node Js, HTML/CSS, GIT, Bash, Linux, Oracle SQL, MongoDB, Angular, React, Spring

**Cloud Tools:** Docker, AWS, GCP, Jenkins, Red Hat Openshift Container platform, Heroku, Redis Cache

**AI:** PyTorch, PyTorch Lightning, Tensorflow, Hugging face, NLTK, Horovod, Pandas, Scikit-learn

## PROFESSIONAL EXPERIENCE

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### High Performance Computing, TAMU

Graduate Research Assistant

College Station, Tx

Jun 2023 - Present

- Evaluated ML workloads on HPC clusters, with benchmark models like Resnet, BERT, GPT2, Llama2, and Fastpitch
- Performed benchmarking experiments on Nvidia GPUs, Intel GPUs and Graphcore IPU
- Utilized distributed deep learning frameworks (Torch Run, Horovod, Mpirun, PyTorch Lightning) for scaling and precision study
- Acquired hands-on experience working with Python and PyTorch, including profiling CPU/GPU code
- Developed proficiency in core HPC tools, including Linux environment and job scheduling techniques.

### Barclays

Software Engineer, Backend

Pune, India

Jan 2020 - Jan 2022

- Contributed to the development of a microservice for a mobile payments software using Spring Boot and RabbitMQ. Focused on building APIs for functionalities like registration, profile viewing, transaction history access, and automated payments
- Led the development of a cron job utilizing cron expressions to automate bulk customer deregistration during COVID-19 bank downsizing, which reduced the completion time from an initial estimate of 4 weeks to just 1 week.
- Implemented unit and integration testing for Spring Boot APIs using JUnit, Mockito, and Spring Boot Test. Achieved and maintained code coverage above 95%, ensuring robust and reliable APIs.

### Barclays

Software Engineer, Frontend

Pune, India

Aug 2018 - Dec 2019

- Developed a library of reusable web components using Storybook UI, promoting efficiency. Successfully facilitated knowledge transfer to 2 internal teams, enabling them to seamlessly integrate these components into their projects.
- Collaborated with a team of 3 developers to build the mobile payments software UI using Angular and Ionic frameworks. This developer-friendly application facilitated secure transactions and was adopted by 16 Premier League clubs at the time.
- Migrated legacy JSP web pages to modern, single-page applications using Angular.

## PROJECTS

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- **Storybook Generator (Python, ReactJS, HuggingFace, Docker, AI):** Built a custom API to integrate Stable Diffusion into a storybook generation platform, allowing users to generate images based on their text prompts. Designed a user-friendly interface in ReactJS for seamless image generation. Enhanced the platform with React DnD Kit, Chakra UI, and MSW for improved functionality, user interface, and testing capabilities. Created an image caption dataset using Selenium web scraping. Optimized Stable Diffusion XL model with LCM-LoRA fine tuning technique for real time inference.
- **Low powered Image Classification (PyTorch, AI):** Implemented Pre-activation Wide ResNets with Group Normalization and Weight Standardized convolutions in PyTorch; trained on CIFAR-10 dataset and achieved 94.75% accuracy
- **BitBid (Django, PostgreSQL, Docker, CI/CD):** Led a team of 6 members as a Scrum Master in developing an auction website using the Django framework for cryptocurrency bidding, allowing for efficient transactions. Developed a Continuous Integration/Continuous Deployment (CI/CD) pipeline utilizing GitHub workflows, Docker, and Heroku containers to automatically generate image builds and deploy the application upon code push triggers, resulting in a streamlined development process
- **American Sign Language (TensorflowJS, Docker):** Fine tuned ResNet model to detect sign language and achieved 96% accuracy on the ASL Kaggle dataset. Integrated the model into a web application using TensorflowJS and Docker

## LEADERSHIP / ACHIEVEMENTS

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- Taught university researchers on accessing Jupyter Notebooks in HPC clusters
- Assisted teaching undergraduate students on the Python for Economics short course
- Recipient of a Scholarship from the Department of Computer Science, Texas A&M for outstanding academic excellence.