Rajasekhar Mekala

+1(949)-992-6595 | rajasekharreddymekala732@gmail.com | rajasekharmekala.github.io | 🔗 rajasekhar-mekala

EDUCATION

University of California, Irvine   Sep 2021 - Jun 2023
Master of Science in Computer Science (GPA: 3.94/4.00)   *Irvine, CA*

Indian Institute of Technology, Kharagpur   Jul 2014 - May 2018
Bachelor of Technology in Electrical Engineering, Minor in Computer Science (GPA: 9.04/10.00)   *Kharagpur, India*

Relevant Coursework: Machine Learning, Statistical NLP, Deep Generative Models, Reinforcement Learning
Distributed Systems, Middleware Systems, Operating Systems, Transaction processing, Networks

RESEARCH EXPERIENCE

University of California, Irvine   Jun 2022 - Present
Graduate Student Researcher (Advised by Dr. Sameer Singh)   *Irvine, CA*
- Developed tools to analyze **pretraining data statistics** in open-source language models like GPT-J-6B and Pythia.
- Designed a framework to assess the **robustness** of large **language model reasoning** against perturbation sentences.
- Currently researching the realms of **explainability and consistency** in **chain-of-thought reasoning**, with a special focus on arithmetic and logical reasoning tasks.

Adobe Research India   May 2017 - Jul 2017
Research Intern   *Bangalore, India*
- Developed a framework to **detect and mitigate performance issues** in the shared cloud, using machine learning techniques.
- Worked with distributed computing frameworks like **Apache Spark** and **Hadoop** on AWS to experiment on **memory, network bandwidth** intensive jobs.
- Received recognition with a **best intern project** award among all **23 research projects**.

PUBLICATIONS AND PATENTS (GOOGLE SCHOLAR)

- **Mekala, R**, Razeghi, Y, Singh, S. *EchoPrompt: Instructing the Model to Rephrase Queries for Improved In-context Learning-* ARR 2023 (Submitted)
- Razeghi, Y.* **Mekala, R.**,* Logan, R, Gardner, M, Singh, S. *Snoopy: An Online Interface for Exploring the Effect of Pretraining Term Frequencies on Few-Shot Language Model Performance* - EMNLP 2022
- Subrata Mitra, Sopan Khosla, Sanket Mehta, **Mekala Rajasekhar Reddy**, Aashaka Dhaval Shah. *Tenant-side detection, classification, and mitigation of noisy-neighbor induced performance degradation* - Patent No: US20190354388

PROFESSIONAL EXPERIENCE

TruckX Inc   Jul 2022 - Present
Software Engineer   *Sunnyvale, CA*
- Engineered efficient **microservices** to handle **real-time** data from IoT trackers, ensuring seamless data management.
- Devised **end-to-end solutions** to track remote driving and enforce safety and regulatory HOS compliance among truckers.
- Spearheaded the development team in a **successful launch** of ELD trackers in **Canada**.

Adobe   Jul 2018 - Aug 2021
Software Engineer II   *Noida, India*
- Led the development of a **Documentation Help Center** on AEM, building **microservices** for client apps.
- Designed **search autocomplete** and analytics in Adobe RobohelpServer for technical documentation.
- Improved search latency by **27%** and relevancy by **31%** on Adobe Robohelp-generated documentation.
- Received **Spot award** and **Special contribution award** for innovative implementations in Adobe Robohelpserver.

PROJECTS

- Developed a framework to **extract impactful quotations** from provided documents - Quote Extractor | *PyTorch, BERT, NLP*
- Designed an **area estimation tool** for geospatial images -Geospatial Area Estimation | *Segmentation, ResNet18, UNet50*
- Predicted hospital readmissions in diabetic patients using **ML techniques** - Hospital Readmissions | *ML, SVM, ANNs, Boosting*
- Empowered author's partial sentences with **autocomplete** suggestions - Text Autocomplete | *finetuned distilled Roberta, GPT2*
- Built a recommender system using **Multi-depth Hierarchical Encoders** - Article recommender system | *PyTorch, Transformers*

TECHNICAL SKILLS

Languages: Java, Python (including Pandas, Numpy, Django, Flask), Javascript, SQL, HTML/CSS, C/C++, Bash, Scala
Infrastructure: Docker, Kubernetes, GCP, Azure, MYSQL, Oracle SQL, PostgreSQL, MongoDB
Frameworks: Pytorch, Transformers, Tensorflow, Scikit-Learn, NLTK, HuggingFace, SpaCy, Flink, Kafka, Hadoop, Spark
Skills: Training and finetuning LLMs and ML models, OOPs, Full-Stack Development(React, Node.js, Maven), System Design.

ACHIEVEMENTS

- **Teaching Assistant** for Senior Software Design(INF 191A,B)with 75+ students and 15 sponsored projects.   2021 - 2023
- **Active member** and **collaborator** at KWoC ("Kharagpur Winter of Code") open source community.   2017 - Present
- Secured **All India Rank 481, 120** in IIT JEE Advanced, Mains respectively among 1.5 million applicants.   Apr 2014
- Selected for a one-month training program to represent India at **International Maths Olympiad.**   Apr 2013