Rajasekhar Mekala

+1(949)-992-6595 | rmekala@uci.edu | rajasekharmekala.github.io | 🔗 rajasekhar-mekala

EDUCATION

University of California, Irvine   Sep 2021 - Present
Master of Science in Computer Science (GPA: 3.90/4.00)   *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, WB*

Relevant Coursework: *Distributed Systems, Operating Systems, Transaction processing, Algorithm analysis, Networks Natural language processing, Machine Learning, Image understanding, Deep Generative Models, Probability and Statistics*

PATENT

Tenant-side detection, classification, and mitigation of noisy-neighbor induced performance degradation
by Subrata Mitra, Sopan Khosla, Sanket Mehta, Mekala Rajasekhar Reddy, Aashaka Dhaval Shah
Topic | Interference detection among virtual machines in the cloud environment

PUBLICATION

Snoopy: An Online Interface for Exploring the Effect of Pretraining Term Frequencies on Few-Shot Language Model Performance by Razeghi, Y.,* **Mekala, R.,*** Logan, R, Gardner, M., Singh, S.(accepted)*EMNLP'22*

EXPERIENCE

Software Engineer Intern   Jun 2022 - Present
TruckX Inc   *Mountain View, CA*
- Worked with **Bluetooth**, **Wired ELD**, **DashCam**, and other IoT devices to track trucks and certify **HOS compliance** of drivers
- Set up **Cloud Infra** and created **microservices** to live stream asset trackers feed and provided analytics on **react-native android** and **iOS** applications

Deep learning Engineer Intern   Jun 2022 - Jul 2022
Siterecon.ai   *Bangalore, India*
- Worked on providing **high-resolution segmentation services** using deep learning models for geospatial images, area estimation for private properties
- Set up the **docker images**, cloud infrastructure, and **MLOps** for frequent experimentation with computer vision models

Software Engineer I-II   Jul 2018 – Aug 2021
Adobe Systems Inc   *Noida, India*
- Helped create **Documentation Help center** on **Adobe Experience Manager** from scratch, implemented analytics microservices for client apps.
- Renewed legacy **Adobe Robohelp** desktop application (part of the team) and **RobohelpServer** from Adobe Torq to React in **just 5 months**
- Integrated Adobe Robohelp with external Knowledge base portals of **Salesforce**, **Zendesk**, **ServiceNow** and **Zoho** which enabled authors to easily manage their help content from a **single source**
- Implemented **search autocomplete** and **analytics** in Adobe RobohelpServer for technical documentation
- Improved **search latency** by **27%** and **relevancy** by **31%** on Adobe Robohelp-generated documentation
- Developed a **JSON-based framework** from scratch to render webpages in React, which is currently used in many products of **TechComm, PPBU** at Adobe

Big Data Research Intern   May 2017 - Jul 2017
Adobe Systems Inc   *Bangalore, India*
- Used machine learning approaches to **identify, detect** the cause and **mitigate** the phenomenon of interference among virtual machines in the cloud environment
- Worked with distributed computing frameworks like **Apache Spark** and **Hadoop** for experimentation with **memory, network bandwidth** intensive jobs

Projects and Contributions

Quote Extractor | *Python, Pytorch, BERT, NLP*   Apr 2022 | report
- Designed and implemented a **quotation extraction tool** that **extracts powerful quotations** from the provided documents
- Assumed **Goodreads API** as reference for a partial set of quotations and used **BERT** Transformer, **LSTM, Multi-head attention** models for training on a collection of ebooks to identify potential quotes, similar to reading comprehension and summarization tasks

Transaction processing in replicated databases *Python, Distributed systems, PostgreSQL*   Apr 2022 | report
- Implemented transaction management layer for replicated **PostgreSQL** databases with node failures
- Used **optimistic concurrency, Validation, 2 Phase Commit** protocols to validate consistency and serializability along with faster mechanisms to process read-only transactions

Segmentation in Geospatial Images | *Python, Pytorch, Segmentation, Computer Vision*   Apr 2022 | report
- Evaluated neural architectures like **ResNet-18, U-Net50, DeepLabv3, EfficientNet-B4** for segmentation on geospatial images and analyzed various polygon smoothing approaches for geographical area estimation

Fire Engine | *Python, Information Retrieval*   Jan 2022 - Mar 2022
- Implemented semantic search engine on UC Irvine webpages for merged rank retrieval from multiple databases

DivCo | *Python, Pytorch, Pix2Pix, BiCycle GAN, Image - Image Translation*   Sep 2021 - Mar 2022
- Implemented "Diverse Conditional Image Synthesis via Contrastive Generative Adversarial Network" paper and explored its results on various datasets

Analysis of ML Algorithms to Predict Hospital Readmissions | *Python, ML*   Oct 2021 | report
- Conducted performance analysis of various **ML algorithms** like **Random Forests, SVM, Neural Networks, Decision trees** and other **Boosting algorithms** for predicting hospital readmissions among diabetic patients.

Text Autocomplete | *Python, Pytorch, Transformers, Distilled-Roberta, GPT2, NLP*   Dec 2020 - Aug 2020
- Generated autocomplete suggestions using **fine-tuned distilled Roberta** and **GPT2** transformers for the author's partially written sentences in a text editor, based on the **semantic context** of the article.

Related Articles Recommender | *Python, Pytorch, Recommendations*   Dec 2020 - Aug 2020
- Worked on building an **Article recommender system** based on "Siamese Multi-depth Transformer-based Hierarchical Encoder for Long-Form Document Matching" research paper, given a set of documentation articles.

Pagerank on Evolving graphs | *Python, Web*   Jan 2018 | code
- Implemented **incremental Pagerank** graph algorithm to calculate Pagerank for **frequently evolving networks**

Technical Skills

Programming Languages: Java, Python, C/C++, SQL, HTML/CSS, Bash, Matlab, Scala
Web Development: React, Node.js, HTML, CSS, JS, Jquery, Django, Flask, FastAPI, GraphQL
Databases: MYSQL, Oracle SQL, PostgreSQL, MongoDB
Infrastructure: Docker, Kubernetes, GCP, Azure, AWS
Other: Git, Pytorch, Tensorflow, Scikit-Learn, Maven, VS Code, Visual Studio, IntelliJ, Eclipse

Awards and Achievements

- **Teaching Assistant** for Senior Software Design(INF 191A,B)with 75+ students and 15 sponsored projects 2021 - 2022
- **Active member** and **collaborator** at **KWoC** ("Kharagpur Winter of Code") open source community   2017 - 2022
- Mentored incoming college interns at **Bright Idea, Adobe**   2020 - 2021
- Received **Spot award** for spontaneous resolution of customer issues, by the director of PPBU, Adobe   Feb 2021
- Awarded **Special contribution award** for innovative implementations in Adobe Robohelpserver   Apr 2020
- Received **best intern project** award among all **23 intern projects** at Adobe   Jun 2017
- 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
- Awarded the prestigious **KVPY Scholarship** from Department of Science and Technology, Govt of India   Mar 2013