RITIKA MOTWANI

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EDUCATION

New York University - Courant Institute of Mathematical Sciences *Expected May 2024*
Master of Science, Computer Science *New York City, NY*

     Algorithms, Cloud Computing, Operating Systems, Multicore Processors, Big data Application Development, CV

Indian Institute of Information Technology Allahabad 2015 - 2019
Bachelors of Technology in Information Technology with honors. *Prayagraj, India*

WORK EXPERIENCE

Princeton University June 2023 - July 2023
Research Software Engineer Intern (computer vision/ audio engineering) *Princeton, NJ*

- Developed a secure software solution enabling the categorization of videos using deep learning computer vision models (**maskRCNN**) and created a user friendly interface with filters of over 100k videos based on activities helping researchers conduct data analysis. Led the implementation of **video transcription** and **diarization** using **OpenAI Whisper** and **pyannote**, enhancing content accessibility on the platform.
- Above work was used with first-ever family dataset collected to research effective parental teaching methods for young children.

Glints Aug 2019 - July 2022
Senior Software Engineer (Team Lead) *Singapore*

- Led development on a disruptive recruiting platform customized for SEA countries & Taiwan filling gaps in internationalization and accessibility present in other global platforms, and scaled it up to hit 5m+ candidates with 3+ recruiter matches per month.
- Contributed across cross-functional teams to build the core recruitment processing engine with a stack spanning **ReactJS**, **GraphQL**, **kafka streams**, **scala**, **nodejs**, **Elasticsearch**, **Postgres** and **hadoop**; Wrote sync pipelines to sync postgres ops to our index store, reducing the latency from **24h to < 1s**, boosting availability.
- Got promoted to team lead driven by a successful migration of our product to a different access control middleware/permissions model without any downtime or data loss. It involved investigating and resolving production **OOMs** and latency issues in an application using NodeJS, Redis, Postgres services through query optimizations.
- As lead, built a highly autonomous agile scrum team focused on recruitment engine from scratch.

Google Summer of Code - FOSSASIA Jun - Aug, 2018

- Created an OSS event manager using **RESTAPIs**,**Flask**,**Postgresql** and **EmberJS** with payment gateways.

PUBLICATIONS

Khare, Abhinav, **Motwani, Ritika**, Patil, Jayesh, Akash, S., Kala, Rahul "Learning the Goal Seeking Behaviour for Mobile Robots." *2018 3rd Asia-Pacific Conference on Intelligent Robot Systems (ACIRS). IEEE, 2018.*

SELECTED PROJECTS

Easy Eyes New York University - Research Assistant

     Collaboration with Prof. Denis Pelli on research to uncover early dyslexia predictors and investigate correlations among visual measures. Responsible for developing a **full-stack** application with **audio signal processing** for an experiment compilation tool, enabling precise vision and hearing tests, specifically sensitivity and crowding.

Comparison Study: Cloud Providers Leveraging K8S for ML New York University - Cloud Computing

     Explored ML model deployments on major cloud providers[**GCP, azure, AWS, IBM**], while leveraging Kubernetes. Reviewed metrics like **FLOPS**, CPU utilization, and how the system managed resource-demanding loads. Used CPU utilization as the key metric for **horizontal autoscaling**, optimizing associated resources.

Automatic Speech Recognition system(ASR) Nanyang Technological University - Research Assistant

     Designed data flow pipelines, integrated speech APIs, and designed a **RBAC** capable transcription text editor with re-speak capabilities for post-transcription processing in collaboration with investors for the system.

HONORS & AWARDS

- **Open Source Conferences**: Got scholarships for GraphQL Conf 2023 in SF, Linux Summits in Tokyo and Paris.
- **Hackathon**: Won the best team award in Hack In The North, IIITA. Won the internal Glints hackathon.

SKILLS

Python, C++, SQL, javascript, CSS, HTML, GraphQL, Docker, Typescript, React JS, Redux, NodeJS, Git, NextJS, Postgresql, Pytorch, AWS, Mongo, Kubernetes, ExpressJS, Django, CUDA, ZooKeeper, Redis, Go, Rust, Java, ci/cd, Angular, Kafka, Google Cloud, PsychoJS, IBM Watson