RACHIT JAIN

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EDUCATION

New York University, Courant, NY | GPA: 4.0/4.0 **May 2023 (expected)**
Master of Science in Computer Science
Courses: Cloud and Machine Learning, Operating Systems, Multicore Processors, Big Data Science

Manipal Institute of Technology, Manipal | GPA: 8.71/10.0 **July 2018**
Bachelor of Technology in Computer Science and Engineering (Specialization: Intelligent Systems)

SKILLS

- Languages: Java, Python, C, C++, SQL, HTML, CSS
- Frameworks: Tensorflow, Android, Keras, PyTorch, Weka, Docker, Kubernetes, numpy, pandas, scikit-learn, nltk, GCP AI Platform, AWS Sagemaker, IBM WatsonMachineLearning
- Version Control Systems: Git, Perforce VCS

PROFESSIONAL WORK EXPERIENCE

Samsung Research Institute **Aug 2018 – Aug 2021**
Software Development Engineer
- Added 22 spoken languages to the Samsung Keyboard by developing APIs for concurrent processing of text.
- Contributed to Auto Sanity Tool for easy validation, quality checks, memory leaks and UI issues using the Cucumber Framework. Deployed on QuickBuild servers for running automated tests after new changes were committed.
- End to end integration of Google talkback for accessibility settings to enable rapid key input typing for keyboard.
- Technologies used: Java, XML, Gerrit, Perforce, Cucumber Framework, Knox Services.

Key Projects: COVID Task Force **Sep 2020**
- Developed an application for detecting heart rate and SpO2 using mobile camera and frame rate algorithms.
- Achieved an accuracy of 94% using K-means clustering to detect color gradients.
- Solution achieved an output latency of ~5 seconds and cost cutting of ~$1.62 per mobile device.

Key Projects: KUDO (Keyboard yoU Draw on your Own) **Dec 2019**
- Developed a custom drawn paper keyboard which could be used using mobile camera and accelerometer.
- Designed the architecture for image processing at the native layer to reduce JVM calls to decrease output latency.
- Won the best project award in a Samsung Research Hackathon.

Samsung Research Institute **Jan 2018 – May 2018**
Software Development Engineering Intern
- Designed an emoticon/sticker recommendation backend engine for Samsung Keyboard using TensorFlow & Keras.
- Developed a recurrent neural network (RNN) to predict the emotion of a user based on written context.

ACADEMIC PROJECTS

Automated Machine Learning Workload Management System **Feb 2022**
- Developed a workflow orchestration system to manage machine learning workloads on GCP, AWS, IBM Cloud.
- Designed Airflow DAGs to execute the lifecycle of the workloads using respective cloud provided SDKs and REST APIs.

Performance prediction of multithreaded applications (https://github.com/rachitjain2706/MTA-PP**)** **Nov 2021**
- Analyzed several regression models - LASSO, Ridge, Random Forest on PARSEC 3.0 dataset (Mean Absolute Error - 0.72).
- Features selected: Cycle counts, instruction counts, branch predictability, cache performance.

rsh-shell (https://github.com/rachitjain2706/rsh**)** **Oct 2021**
- Developed a custom linux shell application in C++.
- Features implemented: cd, multi pipe operations, I/O redirection, handling of suspended jobs.

POS tagger (https://github.com/aneesh-joshi/LSTM_POS_Tagger**)** **Oct 2017**
- Used Bidirectional LSTMs to predict POS tags from a list of 87 tags with an accuracy of 96% in Keras.
- Experimented with architectures and hyperparameters for performance improvement.

Parallelized Steganography (https://github.com/rachitjain2706/Steganography**)** **Mar 2017**
- Developed an algorithm to embed sensitive data in images by encoding it in the least significant bits of pixels.
- Parallelized message encryption and decryption using OpenMPI and CUDA.

PATENTS

- 202211009343 - “Method for noise separation from body reflected optical signal for blood viscosity” **Feb 2022**
- 202241001616 - “Method and electronic device for adaptive user interface on electronic device” **Jan 2022**
- 202141038095 - “Method and electronic device for auto focus of scene” **Aug 2021**
- 202041031683 - “Method and electronic device for enabling virtual input on electronic device” **Jul 2020**