

# KARAN TYAGI

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## EDUCATION

**San Jose State University (SJSU), San Jose, California, USA**  
*Master of Science in Software Engineering*

Aug 2021-May 2023  
CGPA: 3.78/4.0

## TECHNICAL SKILLS

- **Coursework:** Machine Learning, Deep Learning, Artificial Intelligence, Data Mining, DBMS, Operating Systems, Design & Analysis of Algorithms
- **Programming Languages:** Python, Scala, SQL, Java, JavaScript, Typescript, HTML
- **Environment & Tools:** Git, Rasa, Django, Heroku, Seaborn, Neo4j, Pandas, SciPy, Keras, TensorFlow, NumPy, Scikit-learn, SQLAlchemy, PyQt, OpenCV, AWS, Docker, Scrum/Agile, Hadoop

## WORK EXPERIENCE

**Software Engineering Intern, Credit Karma, Charlotte, USA**

Jun 2022 - Aug 2022

- Implemented a job to correctly shard and store more than 100,000 reviews for the Credit Cards vertical using Scala and MySQL.
- Refactored the fetch and store reviews implementation for a weekly job. Changed the implementation to fetch and store one file at a time from a third-party vendor, hence, avoiding out-of-memory errors.
- Extract, transform, and load (ETL) 4 tables from the review schema into BigQuery.
- Refactored the Java-styled Try blocks to Scala Try and wrote unit tests to ensure 100% branch coverage.

**Research Assistant, Indian Institute of Science (IISc), Bangalore, India**

Jan 2021 - Jun 2021

- Annotated more than 7,000 images using the CVAT (Computer Vision Annotation Tool) for lane detection on Indian roads under Dr. Pradipta Biswas.
- Coordinated in building a deep convolutional neural network architecture for the labeled data. Training Dataset: IDD (Indian Driving Dataset) Benchmarking Datasets: TuSimple, CULane. Model accuracy: 95.19%.
- Trained and tested neural network models for an industrial client. Used the model predictions to evaluate an objective function for a genetic algorithm-based program and the Particle Swarm Optimization algorithm. Model accuracy: 92.13%.

**Software Development Intern (Pipeline), Tau Films, Hyderabad, India**

Jan 2020 - Nov 2020

- Added sort, filter by name functionality to Taco – an in-house tool using python, to load and see tasks assigned to an artist.
- Developed the transfer framework for Vendata – a proprietary pipeline tool that reduced the duration of the file uploading process by 80%.

**Software Development Intern (Pipeline), Double Negative (DNEG), Mumbai, India**

May 2019 - Jul 2019

- Developed a lighting tool using Python library PyQt and Autodesk Maya API to help reduce the light-rig setup time by 90%.

**Web Development Intern, COMP-2000, Sarajevo, Bosnia and Herzegovina**

Jul 2018 - Jul 2018

- Implemented a website, using the .NET framework, to keep records of the client companies. The website enabled the centralization of company data improving the time to fetch data by 45%.

## PROJECTS

• **Petals to the metal - Flower Classification on TPU**

Feb 2022 - Apr 2022

- Trained Machine Learning models to identify 104 types of flowers based on images stored in TFRecord format using TPU (Tensor Processing Unit).
- Scored an accuracy of 94% with ResNet using data augmentation and adaptive learning rate.

• **Don't Sleep - Drowsiness Detector for Driving**

Aug 2021 - Nov 2021

- Built a Django application using OpenCV, NumPy, and Pandas to detect if a driver has slept while driving by analyzing 68 coordinates that map to the driver's face.
- Deployed the application using Heroku. The application would send an emergency SMS using Twilio API if the driver has closed the eyes for more than 5 seconds.

## LEADERSHIP

• **Chief Finance Officer, IAESTE LC (The International Association for the Exchange of Students for Technical Experience – Local Committee), Manipal University Jaipur (MUJ)**

Nov 2017 - Dec 2018

- Administered funds (membership fees, placement fees, interns' stipends, and expenditure) and the financial viability of all major activities carried out by a 250-member strong organization.

## HONORS AND AWARDS

- Finalist in the Smart India Hackathon'19 organized by the government of India.
- Got the second position at the State level and qualified for the National round of the Start-up League Competition'18.