

HARSH RAVAL

harshraval@gmail.com

<https://www.linkedin.com/in/harshraval/>

Charlotte, NC, USA

Phone: +1 980 267 5728

EDUCATION

Master of Science, Computer Science University of North Carolina at Charlotte (GPA: 3.7/4) **Aug 2021 - May 2023**
Bachelor of Engineering, Computer Engineering Mumbai University (GPA: 7.98/10) **July 2017 - May 2021**

SKILLS

Languages : Python, Java, C++, SQL

Frameworks and Libraries : TensorFlow, Keras, Scikit-Learn, Pandas, NumPy, Matplotlib, Flask, Django, Spring Boot, Angular JS

Tools and Technologies : REST API, JSON, Git, MS Excel, Jupyter Notebook, Google Colab, VS Code, Pycharm, Netbeans

Web Technologies : JavaScript, React, Node, HTML/CSS

Databases : MySQL | **Shell Scripting :** Linux, macOS

WORK EXPERIENCE

Graduate Teaching Assistant

Jan 2022 - Present

University of North Carolina Charlotte, USA

- Teaching Assistant for 2 Graduate level courses 'Applied Machine Learning'.
- Responsibilities - grading assignments of 47 students, evaluating projects, and conducting office hours.
- Assisted students articulate technical challenges and solutions.

Python Developer

July 2019 - Dec 2019

Talent Excel, India

[Python, Django, BFS, SQL, MYSQL, REST API, Heroku, HTML, CSS, JavaScript, JIRA]

- Collaborate with a team of 6 to design a campus navigation app capable of providing shortest path to reach destination.
- Developed Python based backend services for positioning, navigation and sending notifications using Django Framework.
- Fabricated REST API aligning with MySQL relational database to share relevant data with fault-tolerant mobile application.
- Devised high-quality solutions and created user interfaces easy to use with Flutter and Firebase.

ACADEMIC PROJECTS

Citation Field Extraction

Nov 2021

[Python, Tensorflow, RNN, LSTM, Bidirectional LSTM, Text Classification, CNN, Multilabel Text Classification, Deep Learning]

- Build ML model to classify each word of sentence to its corresponding classes such as author, date, title, book title, etc.
- Created a recurrent neural network using Tensorflow that achieved classification accuracy of 73%
- Researched and Constructed hamming loss function, Conv1D layer and used Adam optimizer to get an enhanced performance.
- Applied combinations of LSTMs and Bidirectional LSTMs on vocabulary size of more than 10K sentences.
- Measured effectiveness of model by deliberately changing learning rates, batch size and activation functions.

Image Mask Prediction

Oct 2021

[Python, CNN, MLP, TCNN, Tensorflow, Keras, Pandas, Numpy, Matplotlib, Google Colab]

- Modeled Convolution Neural Networks to unriddle the task of image segmentation and predict appropriate masks.
- Coached Multilayer Perceptron and CNN on a preprocessed dataset of 320 horse images using Tensorflow.
- Researched and Performed Transposed CNN leading to optimized model performance upto 66% accuracy.

Organ Donation Mapping System

Aug 2021 - Nov 2021

[Java, SQL, MYSQL, Spring boot, Angular JS, JSON, HTML, CSS, Rest API, Agile]

- Designed and developed REST APIs using Spring Boot with MySQL Database connectivity.
- Involved in design and development phases of Agile Software Development.
- Used Angular JS as frontend framework for web routing.
- Managed and coordinated with the team to maintain architecture for Rest API using Spring Boot.

Crop Progression

Feb 2021 - May 2021

[Machine Learning, Flask, MySQL, Pandas, Matplotlib, Numpy, MS Excel, SciKit-Learn, Rest API, HTML, CSS]

- Executed and compared Decision Trees, SVMs and Random Forest Algorithms to build a Crop Recommender ML model that classifies 25 crops and assists farmers to maximize profits.
- Trained a machine learning model on 17K samples to estimate yield of more than 20 crops using Sci-kit Learn.
- Revitalized model by adding the Rainfall(in mm) as a critical parameter. Achieved an accuracy of 93% on Test dataset.
- Developed a web app using Flask REST APIS and HTML,CSS for UI design.

ACHIEVEMENTS

Software Edition Hackathon

Aug 2020

- Secured 1st place in Smart India Hackathon 2020 Software Edition (MHRD Ministry, India) with a cash prize of INR 100K.
- Spearheaded and strategized the workflow to build a full fledged mobile application in a span of 1 week to help farmers estimate crop production before harvesting.