

# MAHESH RAMESH DESAI

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## EDUCATION

**Master of Computer Science and Engineering ,**  
*University at Buffalo, The State University of New York*  
**Bachelors of Computer Engineering,**  
*University of Mumbai*

August 2021-February 2023

August 2017-May 2021

## TECHNICAL SKILLS

Programming - C, C++, Python, JavaScript, Java, React JS, HTML, CSS, SQL, Typescript, JSON, MATLAB  
Databases and Framework - Flask, Django, NodeJS, MySQL, Mongo DB, Hadoop, AWS  
Software and Tools- Docker, MapReduce, Shell script, Raspberry PI, Visual Studio Code, ETL, Git, RabbitMQ

## EXPERIENCE

**Research Software Engineer , IAD-SUNY Buffalo, Buffalo, NY,**

June 2022 - Present

- Incorporated Agile software development methodology throughout project lifecycle to enhance collaboration improving 20% in project delivery and team productivity
- Designed and implemented an image processing module, achieving a 75% reduction in invalid points through junction point elimination and employing Otsu thresholding for extracting the skeleton of Org Chart figures
- Conducted Name Entity Recognition with Spacy on OCR data, identifying Job Titles and Names
- Built application pipeline to extract graph data on Linux server by creating environment using PyTorch and CUDA
- Leveraged Pillow and OpenCV to calculate dominant pixel color of a legend patch and enhanced 85% detection by identifying pixels within a similar HSV value range, detecting lines and relating it to labels in legend
- Identified symbols in legend using morphological process, detected similar symbols in line graph image by feature extraction and matching using FAM-Net model giving 75.6% accuracy

**Software Engineering Intern, Cyberace Infovision Private Limited, Mumbai, MH,**

June 2019 - December 2019

- Collaborated with team to program web application, designed to comprehend all data of an app on Google Play store to generate useful insights, contributing 15% increase in strategic decision-making
- Employed Python's NumPy, Pandas, Matplotlib, and Scikit-learn modules for meticulous data cleaning, wrangling, visualization, and manipulation, ensuring accurate and reliable data preprocessing
- Utilized ML algorithms, including time series forecasting and sentiment analysis, resulting in enhanced data-driven decision-making

## RELEVANT PROJECTS

**Criminal Clothes Detection (Python, Flask, React.js, Typescript, YoloV3, Mobile Net, OpenCV, Digital Ocean Cloud)**

- Engineered a Flask-based web application utilizing **REST API** to detect criminal attire from CCTV camera footage
- Detected people from video frames with YoloV3, type of cloths using Mobile-Net and clothes color using OpenCV with 81% accuracy and identification
- Utilized MongoDB to capture data from video frames and visually present real-time data through dynamic charts by making use of Chart.js and Plotly.js and hosting project on Digital Ocean Cloud

**RAFT Application (Python, Docker, Flask)**

- Developed a distributed Flask application, deployed on Docker for scalability and containerization
- Implemented multi-threading for leader election using RAFT, ensuring reliability and fault tolerance

**Acuity Eye Test and Disease Detection Application (Python, JavaScript, Flask, Tkinter, Keras, Beautiful Soup)**

- Led a team in developing a web application assesses visual acuity using a Log MAR chart, incorporating Google Speech to Text for voice input within Flask backend
- Trained and integrated Keras eye disease detection module with web application with 79% accuracy
- Displayed information regarding diseases on web page by web scrapping using Beautiful Soup

**Cafeteria Web Management (JavaScript, Nodejs, React.Js)**

- Developed a NodeJS-based web application for a college cafeteria, enabling customers to create accounts, browse menu, add items to carts, and view bills improving 30% customer satisfaction
- Implemented functionalities for manager, allowing to modify menu, track orders, and automating billing