

# SAUBAN MUSADDIQ

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## EDUCATION

### MS, Computer Science

Arizona State University, Tempe, AZ

Aug 2019 – (Expected) May 2021

3.52/4 GPA

Coursework: *Data Intensive Systems for ML, Statistical ML, Topics in NLP, AI, Multimedia & web DB, Image Processing and Analysis, Data Viz.*

### Bachelor of Engineering, Computer Science and Engineering

PES Institute of Technology, Bangalore, India

May 2017

8.66/10 GPA

Coursework: *Big Data, Applied Machine Learning, Advanced Algorithms, Natural Language Processing, Software Engineering.*

## TECHNICAL SKILLS

**Data Science:** PyTorch, TensorFlow, Keras, MATLAB, NumPy, Pandas, Scikit-learn, Spark

**Programming:** Python, Ruby, JavaScript, C, C++, Java

**Web Development:** Ruby on Rails, AngularJS, JQuery, HTML, CSS, D3

**Misc.:** MYSQL, Git, Unix Shell, MS Excel, Docker

## SELECTED PROJECTS

### Paraphrase Identification on PAWS dataset.

Spring 2020

- Developed an NLP model to identify paraphrases, on a dataset containing sentence pairs with high lexical overlap.
- Achieved an accuracy of 92% using a BERT based model. Explored alternate models like a KNN based model and a BERT sentence embedding model that matched the performance with the BERT Model.

Tools and Technology: *PyTorch, NLP, BERT, KNN, Transformers.*

### Automated Cardiac Risk Stratification.

Fall 2019

- Automated the Carotid Intima Media Thickness (CIMT) measurement to stratify the risk of Cardiovascular diseases.
- Adapted an Active contour model variant called as Dual Snakes to delineate the Intima Media layers.

Tools and Technology: *MATLAB, Image Processing, Active Contour Models, U-Net.*

### Facial Photo-Realistic Image Synthesis from Sketch.

Summer 2020

- Successfully generated photo realistic images from pencil sketches using Fixed-point GAN (Generative Adversarial Network), compared the performance with GAN variants, Cycle GAN and StarGAN.
- FP GAN generates facial images that have dramatically reduced artifacts compared to other generative models.

Tools and Technology: *PyTorch, Generative Models, GAN, CycleGAN, StarGAN, OpenCV.*

### Decentralized Emotion Detection Model using Federated Learning.

Spring 2020

- Adapted federated learning architecture for an Emotion detection model to run in decentralized edge devices.
- The Distributed model trains on user data locally in the edge devices while preserving the user's privacy.

Tools and Technology: *PyTorch, PySyft, Distributed ML, CNN, Transfer Learning, Federated Learning.*

### Gesture Recognition from Multimodal Sensor data.

Fall 2020

- Explored different latent dimension discovery methods and different multimodal data representations.
- Implemented Gesture classification algorithms, representative gesture identification using Page Rank algorithm, Gesture clustering using Laplacian Spectral clustering and other clustering methods.

Tools and Technology: *Python, Dimensionality Reduction, Vectorization, Page Rank Algorithm.*

## PROFESSIONAL EXPERIENCE

### Infibeam Avenues, Bangalore, India: Software Developer Engineer.

5/2017 – 7/2019

- Developer for buildabazaar.com, a SaaS platform to create personalized Ecommerce websites. The Platform hosts over 30,000 stores, with each website sharing a single codebase.
- Worked as a Full Stack Dev with exposure to end-to-end product development, from design to testing to deployment.
- Development and integration of core modules and plugins to the platform including integration of services like Payment Gateways, E-Commerce analytics tools and modules like Layout Editor, Product Carousels to the Platform.
- Large scale restructuring of codebase to better fit industry standards like optimizing page speed (Google Page Speed).
- Implemented Quality and Cost Based Selection (QCBS) and other modules for products and services in the public procurement bidding system of Indian Government's E-Commerce Marketplace (GeM) platform.
- Entrusted with remote consultancy work after leaving the fulltime SDE job for Graduate Studies.

Tools and Technology: *Ruby on Rails, AngularJS, Javascript, Git, MYSQL, Docker, Unix Shell, OO Design.*

### Infibeam Avenues, Bangalore, India: Software Developer Intern

1/2017 – 4/2017

- Built a platform to automate the creation of hybrid mobile apps (that work across platforms behaving like native apps) for E-commerce stores using ionic framework. Created a web interface for creating and editing the apps.