**Aman Raj**

[amanrajonworld@gmail.com](mailto:amanrajonworld@gmail.com) | (+91) 8454951810

**EDUCATION**

**Indian Institute of Technology, Bombay Mumbai, Maharashtra**

B. Tech in Mechanical Engineering | CPI – 8.02/102016 - 2020

**K. N. M. Academy Munger, Bihar**

Intermediate/12th | % - 94.6 2014 – 2016

**K. N. M. Academy Munger, Bihar**

Matriculation/10th | CGPA – 10/10 2014

**SKILLS & INTERESTS**

**Languages:** Python (Numpy, Pandas, Scikit-learn, PyTorch, Matplotlib, opencv), C++, PostgreSQL,

Java, JavaScript, HTML/CSS

**Software/Tools:** React, NodeJs, Spring Boot, JPA, Tableau, Excel, Git, RESTful API, Agile development

**PROFESSIONAL EXPERIENCE**

**Standard Chartered GBS**

Currently Working as a **Java Backend Developer in Trade Finance Division** of Standard Chartered

**Campus Induction Program, Standard Chartered GBS**  Oct’20 – Nov’20

* Awarded the **best project** to our team for building a **Payments Initiation** Web Application for Corporates
* Build the frontend and backend for the **Dashboard page** using React components and Spring Boot JPA

**Algo trading based on sentiment analysis of news articles |** [Github](https://github.com/vaderraj/SC_hackathon) Dec’20

Axess Graduate Hackathon**,** Standard Chartered

* Scraped past 6-month news articles from sites like Moneycontrol, ETMarkets to fine-tune the BERT Model using python modules like **Selenium** and **BeautifulSoup**
* Used a pretrained **BERT** model with a classification layer on top to get the sentiments of the news articles
* Achieved an accuracy of **76% on real-time scraped news articles** from the sites and **f1 score of 0.78**
* Developed a basic frontend and backend framework to showcase the project using **React** and **Flask**

**Meru Mobility Tech Private Ltd. Mumbai, Maharashtra**

Deep Learning Intern May’19 – July’19

**Objective** – Real time Person detection and its re-identification in a video feed

* Surveyed literature on **Person detection and Re-identification models** used in a video input
* Implemented a Siamese Recurrent – Convolutional network for the re-identification task on a dataset consisting of **500+** image sequences for **300** distinct pedestrians
* Extracted **normalized Optic flow** between adjoining frames using Lucas-Kanade method
* Implemented a jointly attentive Spatial-Temporal Pooling Network (ASTPN) in **PyTorch** framework
* Constructed **spatial pyramid pooling (SPP)** layer as the component attentive spatial pooling to make the model robust to image sequence of **arbitrary resolution**

**TECHNICAL PROJECTS**

**3D face Reconstruction**

Course Project, Prof. B. Palaniappan August’19 - Nov’19

* Constructed 3D face images from 2D images using **3DMM model** for shape and texture generation
* The parameters for the shape and texture model were learned by a pre-trained Convolutional network

**Hand Pose Estimation**

Course Project, Prof. Sunita Sarawagi Feb’19 - April’19

* Applied Truncated signed distance function (**TSDF**) to convert RGB depth images to 3D images
* Implemented a **3D CNN** network to predict **21** hand joint locations using point cloud data using **TensorFlow**
* Performed 3D data augmentation on the training data to make the 3D CNN model robust to different

orientation and sizes

**CFD modelling of Laser Cladding process**

Course Project, Prof. Ramesh Singh Autumn’18

* Simulated a model of melt pool geometry involved in the Laser cladding process
* Performed **computational fluid dynamics** to simulate the solidification process, predict the temperature variation and porosity in the melt pool

**Data Mining Project**

Course Project, Prof. Asim Tewari Autumn’18

* Compared the linear regression model with the KNN model to find the best fit for given data
* Applied **PCA** for dimensionality reduction and **subset sampling** for reducing number of predictors

**Human Hand Modeling & Animation**

Course Project, Prof. S. S. Pande August ’19 – Nov’19

* Surveyed literature on the structure of hand anatomy comprising of **27 bones** and the joint rotations
* Defined each movement of hand in form of **4 basic movements** (DOF) to simplify the animation model
* Developed the animation model by defining the hand joints and their respective degree of freedom (DOFs) using **Python** and **Vizard** Library, taking account of the proposed simplifications and removing redundancy

**KEY COURSES**

**Math & Computing:** Data analysis & Interpretation, Computer Programming and Utilization,

Numerical Analysis, Engineering Data Mining and Applications, Deep Learning,

Advanced Machine Learning, Computer Graphics and Product Modelling

**Other Courses:** Operations Analysis, Microprocessor and Automatic control,

Computer aided simulation of Machines

**ACHIEVEMENTS & EXTRA-CURRICULARS**

* Secured **98.7** percentile in Joint Entrance Examination (**JEE) Advanced** among 0.2 million students (2016)
* Secured **99.86** percentile in Joint Entrance Examination (**JEE) Mains** among 1.2 million students (2016)
* Bagged **1st position** in Intra school Hindi Essay Competition (2012)
* Participated in the Annual training camp under **2 Maharashtra Engg. Regiment, NCC** (Dec ’16)
* Participated and successfully completed the Boy’s Crossy General Championship (GC), IITB (Jan ’20)
* Handled the Position of **Coordinator for Mood Indigo** (Cultural Festival of IIT Bombay) (Dec’17)
  + Ideated, planned and executed **30+ events** around **20 venues** in a team of 30+ coordinators
  + Incorporated innovative branding involvement and event integrations for sponsors
  + Spearheaded a team of **15+ organizers** ensuring proper work allotment and coordination
* Involved in ‘**SHE**’, spreading awareness about Menstrual cycle and targeting over **200k+** distribution of sanitary pads in rural areas of Maharashtra (Autumn’17)
* Administered a diabetes awareness camp **CURED,** procuring **65,000+** attendance (Autumn’17)
* Participated in the Beat Plastic Pollution campaign organized by **Abhyuday, IIT Bombay** on the occasion of World Environment day (June’18)