
EDUCATION

- **Indian Institute of Technology, Roorkee** Roorkee, India
Bachelor of Technology in Electronics and Communication Engineering; GPA: 8.36/10.0 July.2016 - Present

RESEARCH EXPERIENCE

- **BCMI Lab, SJTU** Shanghai, China
Supervised by Dr Lu Hongtao and Dr Debasis Ghosh August 2019 - Present
 - Working on the development of incremental learning algorithms that could alleviate the problem of catastrophic interference in neural networks
- **Research Project** Roorkee, India
Dr Partha Pratim Roy September 2018 - December 2018
 - Worked on the problem of text detection from images especially text inclined at an angle
 - Developed a method which learnt the angle of elevation as a parameter to be learnt which could then be used to incline the rectangular bounding box to detect the inclined text
 - Proposed method gave good results on synthetic data
- **Research Project** Roorkee, India
Dr Biplab Banerjee December 2017 - February 2018
 - Developed a Siamese network that could use stereo pair of images for the purpose of depth extraction
 - Conducted an extensive literature survey over the problem of detection in computer vision

INTERNSHIPS

- **BCMI Lab, SJTU** Shanghai, China
Supervised by Dr Lu Hongtao May 2018 - July 2018
 - Worked on developing alternatives to Region Proposal Network in a Faster R-CNN framework in an effort to reduce the search space for regions of interest
 - Implemented segmentation networks [Mask RCNN, RefineNet] in Pytorch which received appreciation in the open source community
- **American Express** Bengaluru, India
Machine Learning Engineer May 2019 - July 2019
 - Involved in the development of convolution based neural networks as an alternative to the RNN based architectures; achieved better performances both in terms of time and speed
 - Designed a CNN model using the principles established in Neural Ordinary Differential Equations; established the initial benchmarks for this model to motivate further internal research
 - Proposed a change in the data preparation strategy which led to a 3 percent increase on previously established frameworks

PROJECTS

- **Mask RCNN**
[\[link\]](#)
 - Implemented an open sourced version of Mask RCNN built using Pytorch
 - Was a part of Github Trending when released to the public. It currently has 801 stars and 129 forks on Github

- **neuralNet**
 - [\[link\]](#)
 - A neural net classifier purely built using numpy
 - Provides an option to use either sigmoid or RELU as the activation function
 - Uses a log-likelihood loss function and L2 regularization techniques
- **PredictX: Open AI Hackathon**
 - [\[link\]](#)
 - A recommender system that the team built which predicted colleges (among a limited number of options) and grades using the datasets of the students from Kaggle
 - Trained model gave a commendable accuracy of 78.9 % on the predictions made. Model was also substantially resistant to outliers
- **Course Project: Computer Architecture**
 - [\[link\]](#)
 - A 24 bit RISC processor with implementation in Verilog
 - Used a self developed Instruction Set Architecture
 - Optimized performance by implementing pipelining protocols
- **Course Project: Computer Networks**
 - [\[link\]](#)[\[report\]](#)
 - The aim of this project was to make presence detection, verification reliable and easy
 - Used core networking concepts like UDP broadcast, TCP connections and implemented these ideas in Python
 - Utilized the services of Microsoft Azure Cloud API for presence detection through the front camera

ACHIEVEMENTS

- **ComedK 2016:** Ranked 3 among a pool of more than ten thousand applicants for the examination
- **JEE Advanced 2016:** Ranked 1247 among a pool of hundred thousand applicants for the examination

PROGRAMMING SKILLS

- **Languages:** Python, C++, Verilog
- **Technologies:** Pytorch, Keras, Tensorflow, Git, Linux