Piyush Tiwary

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thebackpropogator.github.io

EDUCATION BACKGROUND

Indian Institute of Technology Patna (IIT Patna) **Bihar, India**
B.Tech, Electrical Engineering *July. 2017-May. 2021*
CPI: 8.05/10

L.V.H College **Maharashtra, India**
Intermediate/+2 in Physics, Chemistry, Maths *2015-2017*
Percentage: 79.84%

EXPERIENCE

Ray-Loc **IIT Patna, India**
Guide: Dr. Sudhir Kumar, IIT Patna, Prof. Sajal Das, Missouri University *Dec. 2019-March 2020*

- The project aims to localize a target device in a Rayleigh faded environment combined with path loss shadowing.
- Derived the likelihood function for the estimated target location and proposed an **Adaptive mini batch Gradient Ascent** technique to maximize this likelihood, and tested the technique on real time data as well as on a simulated environment.
- Manuscript is submitted to a Journal for publication.

Research & Development Intern **Bangalore, India**
Guide: Dr. Manish Gupta, Chair Professor IIIT Bangalore *May. 2019-July. 2019*

- Worked as a part of R&D Team of VideoKen and explored different methods of Speaker Diarization. Studied and made a *Tensorflow* implementation of Google's **UIS-RNN**.
- Made a primitive model which is able to **diarize 2 speakers** with maximum delay of 30 seconds. This model is currently in development stage and will be deployed to diarize "Interview" type of audios.

Crio Summer Of Doing - 2019 **Remote**
Crio.Do *May. 2018-Sept. 2018*

- Developed Back-end of Q-Eats (a food Ordering App) using Spring framework in Java. Learnt and implemented many Industry related tools/technologies like - REST APIs, MongoDB, Caching, Multi-threading, Docker and RabbitMQ. Made an Order Page for QEats in the Capstone Challenge enabling user to see his/her orders and provided various functionalities.

Hybrid Classifier for Smart Agriculture Systems **IIT Patna, India**
Guide: Dr. Sudhir Kumar, IIT Patna, Prof. Sajal Das, Missouri University *May. 2019-June. 2019*

- Worked on Berkeley's Intel Lab Dataset to Localize the positions of wireless sensor nodes. Did an extensive literature review on various application of ML algorithms for Indoor localisation. Proposed a Hybrid classifier approach which is basically a combination of Random Forest and Decision Tree to localise the sensors. Achieved an overall **95% accuracy** and **1.16m localization error**.
- Work published at **ICDCN'19** held at IISC Bangalore.

PUBLICATIONS

- Ankur Pandey, **Piyush Tiwary**, Sudhir Kumar, and Sajal K Das. A hybrid classifier approach to multivariate sensor data for climate smart agriculture cyber-physical systems. In Proceedings of the 20th International Conference on Distributed Computing and Networking, **ICDCŃ19 ACM, 2019**. "click here to view".

Projects

Smart Autobins For Aviation Industries (SAFAI) **IIT Patna**
Automatic Dustbin *Jan. 2020- April. 2020*

- Developed a smart dustbin in a team of 3, which can classify the wastes into one of the 3 categories (Wet Organic, Plastic, Dry Organic).
- The algorithm used a Resnet model to classify the image the waste, this algorithm is deployed on a Rassberry Pi for real time implementation.

History Scrapper **IIT Patna**
Google Chrome Extension *July.2019*

- Building a Chrome extension which provides user with their Browsing history and summary.
- The aim is to deploy Deep Learning techniques to predict most likely site the user is going to visit.
- Built the backend of the extension using Flask framework in python.

Notes Seperator **IIT Patna**
Developer Student's Club *May. 2019- July. 2019*

- Developing an app for students of IIT Patna which can automatically detect whether a given image is of someone's notes or not and will suggest you to delete them.
- Implemented different CNN architectures such as LeNet, AlexNet, VGGNet, GoogleNet and ResNet for classification.

Crime Predictor **IIT Patna**
Data Science Course Project CS244 *Jan. 2019-Apr. 2019*

- Project to Forecast crimes in the city of California using OSN dataset.
- Using various ML algorithms (Decision Tree, Random Forest, SVM, Naive Bayes, etc) to see which one best fits the data most accurately.

Celvika **IIT Patna**
ChatBot *Jan. 2018*

- Used the concept of **LSTMs** and **RNNs** to make a Real time primitive chatbot capable of doing conversation through GUI (like command line or shell).
- The bot is modeled using Tensorflow's seq2seq module with attention. The architecture uses 3 layers which can be configured to be either LSTM or GRU based.

ACHIEVEMENTS

- Secured a Global Rank of **60** in Codechef July Long Challenge'19. *Jul. 2019*
- Specialist(Blue) on Codeforces and 4-star(Purple) on Codechef. *Coding*
- Ranked in top 5000 on UVa Online Judge. *UVa*
- Secured **All India Rank 4880** in JEE Advanced 2017 among **150,000** candidates. *JEE Adv.*

Skills

- **Programming Languages:** C/C++, Python, Haskell, Bash, Java.
- **Deep Learning Tools:** Tensorflow, PyTorch, Caffe, Keras
- **Data Analytic Softwares:** SQL, MATLAB.
- **Tools & Libraries:** Docker, Flask, SpringBoot, LaTeX

Positions Of Responsibility

Project Lead **IIT Patna, India**
Developer Students Club IIT Patna *March 2019-Nov 2019*

- Mentored 2 Deep Learning Based projects - Notes Seperator & Interview Assistant.
- Conducted classes and workshops for students to make them familiar with Deep Learning and tools like tensorflow and pytorch.
- Built the backend of the extension using Flask framework in python.

Badminton Coordinator **IIT Patna, India**
Student Gymkhana IIT Patna *Aug 2019-Present*

- Lead the Badminton team of IIT Patna in various Sports tournament. Represented IIT Patna in 51st (at IIT Madras) and 52nd (at IIT Guwahati) **Inter IIT Sports Meet** along with 4 other teammates