Piyush Tiwary | EE

Room A-512, Boys' Hostel – IIT Patna – Patna, India

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A highly motivated and hardworking individual who is having an excellent academic record till date. Seeking a research based internship where I can use my knowledge and skills to make a contribution in field of Machine Learning.

Education

Bachelor of Technology 8.25/10.0
Electrical Engineering, IIT Patna *(5th Semester)* *2017-21*

Intermediate/+2 79.84%
Loknete Vyankat Rao Hiray College, Nashik (MSBE) *2017*

Matriculation 10.0/10.0
Kendriya Vidyalaya CRLY, Solapur (CBSE) *2015*

Research Experience

Development and Study of Deep Learning Algorithms for Missing Data Prediction
Guide: Prof Sudhir Kumar, EE Dept, IIT Patna *Ongoing*

- Implemented various ML Algorithms to predict the missing feature values and Anomaly Detection.
- Implemented Deep Learning techniques like RNNs and LSTMs to recover missing data points.
- Explored the use of Transfer Learning in Deep Learning

Development of a Hybrid Classifier for Smart Agriculture Cyber Physical System
Guide: Prof Sudhir Kumar, EE Dept, IIT Patna & Prof Sajal .K. Das, CSE Dept, Missouri University *Summer 2018*

- Worked on Berkeley's Intel Lab Dataset to Localize the positions of wireless sensor nodes.
- Implemented a Hybrid Classifier to classify and predict location of each sensor.
- Achieved an overall **95% accuracy** and **1.16m localization error**
- Proposed a Smart Agriculture CPS which can be used in Agriculture to reduce Human effort.

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, ICDCN '19. ACM, 2019. ***"click here to view"***

Relevant Courses

- Foundations of Machine Learning, Advanced Machine Learning, Introduction to Data Science, Data Structures & Algorithms, Computational Complexity, Human Computer Interaction, Linear Algebra, Complex Analysis, Partial Differential Equations

Notable Projects

Notes Seperator
Developer Students Club (Mentor) *Mar'19 - May'19*

- Developing an app for people 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.
- Using different CNN architectures such as **LeNet**, **AlexNet**, **VGGNet**, **GoogleNet** and **ResNet** for classification.
- The Github repository to the project can be found *"by clicking here"*.

Crime Predictor
Guide: Prof Sourav Kumar Dandapat, CSE Dept, IIT Patna *Jan'19 - April'19*

- Objective is to Forecast crimes in the city of California using OSN dataset.
- Using various algorithms to see which one best fits the data most accurately.
- The Github repository to the project can be found *"by clicking here"*.

Celvika the Chatbot
1st year individual project *January'18*
- 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).

Certifications

Combinatorics and Probability
University of California, San Diego *January'19*
- Course on algorithms and standard combinatorial settings for advanced counting and Probability Theory.
- Implemented different Combinatorical algorithms in C++.

Algorithms on Strings
University of California, San Diego *December'18*
- Course on Different String Algorithms and there application in Bio-Informatics.
- Certificate earned can be found by **"clicking here"**

Convolutional Neural Network
Stanford University *November'2018*
- Course on how to build CNNs, and apply it to images including recent variations such as Residual networks.
- Learnt how to apply CNNs to visual detection and recognition tasks.
- Learnt use of Neural style transfer to generate art and applied these algorithms to variety of images.
- Certificate earned can be found by **"clicking here"**

Discrete Mathematics
Sanghai Jiao Tong University *August'2018*
- Course on Basic Discrete Mathematics and ideas for mathematical foundation of Computer Science.
- Certificate earned can be found by **"clicking here"**

Algorithmic Toolbox
University of California, San Diego *July'2018*
- Course on Basic Algorithm techniques and idea for Computational problems.
- Certificate earned can be found by **"clicking here"**

Scholastic Achievements

- Secured **All India Rank 4880** in JEE Advanced 2017 among **150,000** candidates
- Secured **99.96** percentile in JEE Main 2017 among 1.3 million students
- Qualified **RMO 2016** Round 1.
- Active participation on online competitive coding websites - *CodeChef* , *UVa*, *Hackerrank*, *CodeForces*, etc. Member Handle - aquarius31.

Technical Strengths

- **Programming Languages:** C/C++, Python, Haskell, Bash
- **Operating Systems:** Windows, Linux - (Ubuntu, Fedora, Arch)
- **Others:** LaTeX, Matlab, Octave, Arduino, R, Microsoft Office

Positions of Responsibility

- **Project Mentor** (*Developer Students Club IIT Patna (powered by Google)*): Conducted classes and workshops for students to make them familiar with Deep Learning and tools like tensorflow and pytorch. Currently mentoring the project named "*Notes Seperator*".
- **Coordinator,Events Operation Committee-Celesta'19** (*Technical Fest of IIT Patna*): Working in a team of 4 to coordinate and manage all the events of Celesta.
- **Badminton Coordinator** (*IIT Patna*): 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.