

Abhishek Singh Yadav

RESEARCH INTERESTS

Wireless Communications, Graph Theory, Deep Learning, Computer vision, Web system, Cryptography.

EDUCATION

**July 2012 -
May 2017**

Integrated Masters of Technology, Mathematics and Computing, Indian Institute of Technology (Indian School of Mines) Dhanbad, India.

- Dissertation: Simulation of Wireless Networks using Network Simulator NS3.
- Advisor: Dr. M.K. Singh, Applied Mathematics and Dr. Chiranjeev Kumar, Computer Science and Engineering.
- **CGPA: 7.14/10**

April 2012

Central Board of Secondary Education, Children Public Senior Secondary School, Fatehpur

- **XII : Percentile, 87.2 %**
- **X : CGPA, 9.8/10**

TRAINING / INTERNSHIPS

June 2013

Association of computing activities, Indian Institute of Technology Kanpur

- Designing and developing the web application using HTML5, Cascading Style sheets and JavaScript.
- Deploying an android application using Eclipse (currently Android studio) in June 2014

May 2015

Bharat Sanchar Nigam Limited

- Mobile and Wireless Communication systems.
- Deploying web server technology using PHP, MySQL and jQuery in June 2016.

WORK EXPERIENCE

**Mar 2021 -
Current**

Bharat bill payments system BBPS development — 1 Pay

- Designed and developed the completely dynamic recharge and bill payment system with Bill desk for more than 90K billers.
- Implemented login system with JWT, barrier token for secure login and authentication system.
- Using material UI and bootstrap implemented a smooth and elegant interface.

Electronic batch management record system — Serum Institute of India

- Using Typescript, node JS, ASP .NET and SQL server, with API development
- Implemented file management, camera uploads, face login using neural nets, print and file download system with typescript.
- Using MVC framework in ASP.Net C# for backend development with database relationships.

July 2019

Anomaly detection problem in Boeing Aircrafts — Indian Institute of Science

- Working for Boeing Aircraft project on anomaly detection problems with optimizing data from various sensors in chambers for maintaining oxygen levels.
- Based on the temperature, pressure, humidity parameter optimization using data points at every stages
- Using MATLAB, python, Simulink analysis of time series data and to solve using Fick's law.

Artifact removal application using EEG — Indian Institute of Science

- I have worked on artifact removal application on spikes that are detected action potentials using placing dry or wet electrodes on the subject head for Brain and cognitive sciences application.
- Worked on removal of variation in the signal caused by novel eyes or jaw movements in MATLAB reading data from EDF to detect "spikes", "sharps" and "spikes with slow waves", in the EEG datasets.
- We used Input. e file with fieldtrip package and Remove eye blinks and electrical artefacts and Plot both preprocessed and raw data on the same screen

Feb 2019

Walmart products image classification — CrowdAnalytix

- I worked on image classification, Data modeling and deployment using OpenCV, Keras, and TensorFlow and training models on Resnet, VGG16,19, and Xception for capturing text and objects detection in images.
- Detecting Nutrition facts over a food bottle image and then structure and deploy it in required formats
- I have worked on detecting character over images using OpenCV Haar cascade, Regex and CNN's sliding window features.

Dec 2017

License plate recognition in India using OCR — Lincode Labs IT systems

- Using open-source library of License plate recognition, developed and trained the license plates detection system for India using Tesseract OCR and JtessData.
- Generating fonts from around 2000 license plates for generating box and tiff files and train those to generate a trained data file.
- Adding the resources and working on android application for the same

Face recognition using OpenCV, — Lincode Labs IT systems

- Using YOLO algorithm and Darknet open-source library, implemented a face detection system using webcam.
 - Face recognition system to identify known faces such as celebrities using Convolutional Neural Networks.
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ACADEMIC / RESEARCH PROJECTS

July 2013 –
May 2017

“Energy Model Simulation In A Wireless Network Topology Using Network Simulator NS3.”

- Simulation of the performance and energy consumption of the mobile devices involved on a mesh in different configurations.
- Different scenarios have been studied by means of simulation evaluating the consumed energy and reducing that consumption.

Sep 2017 –
Till Date

“Reliable and Efficient Data Acquisition in Wireless Sensor Networks in the Presence of Transfaulty Nodes (ReDAST)”, — Milestone Research and Information Technology

- Dynamic Hole boundary Identification of the transfaulty sensor nodes which form and disappear in an area affected by radiation.
- Construct a network using sensor nodes having RF and acoustic mode to reduce end to end delay and achieve the better energy efficiency using ReDAST algorithm.

MOOCS AND ONLINE WEB COURSES

Topic: Machine Learning on Coursera

Description: Using MATLAB and OCTAVE on Supervised and unsupervised machine learning algorithms.

Guide: Prof. Andrew Ng, Stanford University

Topic: 5 course specialization of Deep Learning on Coursera

Description: Working on Ipython notebooks using Optimization algorithms Back prop, Adam, analyzing bias- variance, comparing Human level performance, training RNNs generally LSTM and GRU models, Transfer learning and deep reinforcement learning.

Guide: Prof. Andrew Ng, Stanford University

SCHOLASTIC ACHIEVEMENTS / AWARDS AND SCHOLARSHIPS

- Won best scholar award for almost 10 years and topped in high school.
- Ranked 18104 (3325OBC) in AIR in IIT JEE 2012.
- Qualified GATE CS 2016 and GATE CS 2017.
- Recipient of CBSE central sector scholarship for meritorious students.
- Recipient of Merit-cum-means scholarship during under graduation course.

TECHNICAL SKILLS

Programming Languages
Libraries

C, C++, Python, Shell scripting, WEB API,
TensorFlow, ASP .Net, C#, Typescript, Node JS, SQL server,

Software skills

Git, MATLAB, GNU Octave, GPU computing with CUDA

EXTRACURRICULARS

1. **Won second runner up in Inter Year Boxing championship.**
2. **Bronze medalist in District level Tae-quando championship**
3. **Yellow belt holder in Karate.**

REFERENCES

- **Dr. Abhishek Kumar Singh**, Department of Applied Mathematics, IIT ISM Dhanbad, Email: abhishek@iitism.ac.in
- **Dr. Badam Singh Kushvah**, Department of Applied Mathematics, IIT ISM Dhanbad, Email: bskush@iitism.ac.in