Deepali Jain

Indian Institute of Technology Roorkee
B.Tech. Electrical Engineering
Senior Undergraduate
jaindeepali.github.io

Areas of Interest

Machine Learning, Data Science, Big Data Analysis, Computer Vision, Natural Language Processing, Signal Processing, Microprocessors, Data Structures

Education

Qualification	Year	Institution	CGPA / %
Bachelor of Technology	2016	Indian Institute of Technology Roorkee	8.8*
Intermediate	2012	Delhi Public School Meerut *(CBSE)*	95.4%
Matriculation	2010	Delhi Public School Meerut *(CBSE)*	10*

*on a scale of 10

Achievements

- Microsoft Code.Fun.Do Winner, 2015
- GSQuantify National Finalist, 2015
- Ideaz Paper Presentation Contest Winner, 2015
- IEEE Programming League National Winner, 2015
- Air Cmde S.C. Mehra Scholar, 2012
- K.V.P.Y. Fellow, 2012
- INSPIRE Fellow, 2012
- National Talent Search Examination Scholar, 2008

Technical Skills

- **Operating Systems:** Linux OS, Windows
- **Machine Learning:** Python Scipy stack, R, Theano, Torch, Caffe, Azure ML Studio, GNU Octave, MATLAB
- **Development:** PHP, Python: (Django, Flask), JS: (ReactJS, NodeJS), Ruby, MySQL
- **IDEs:** R Studio, Vim, Sublime Text, Visual Studio
- **Competitive Programming:** C++, Python, Java
- **Designing:** MicroStation, Gimp, Corel Draw, Photoshop
- **Others:** Bash, Git, Android

Internships

GSoC with CloudCV: Tutorial web app for deep learning concepts and architectures

(22 May 2016 - Present)

The project focuses on:
- Building an interactive web interface for tutorials of basic deep learning concepts such as
  - Neural Networks and Backpropagation
  - Convolutional Neural Networks
  - Recurrent Neural Networks
  - Long-Short Term Memory

  and popular computer vision and natural language architectures.
- Integrating existing codes of leading research papers in the field of Computer Vision and Natural Language with CloudCV.

Adobe Research: Context-Aware media content analysis

(4 May 2015 - 17 Jul 2015)
- Built an end-to-end physical activity recognition system based on accelerometer data from mobile sensors.
- Proved the hypothesis that different context of readers leads to different choice of media articles, using clickstream data analysis.
- Designed and developed an android reading application with added functionality to collect reader's context information from mobile devices.

GSoC with Wikimedia: Book management software for Wikibooks

(19 May 2014 - 18 Aug 2014)
- Worked on a PHP and Javascript based project under Wikimedia organisation with the goal of developing BookManager extension for Mediawiki software in Wikibooks and Wikisource.
- The main focus was on creating a robust and user-friendly interface for editing, reading, navigation and migration of large Wikibooks (~10,000 sections).

Projects

Undergraduate Research Projects

Major: Blind Source Separation of Audio Signals

(January - April 2016)
- Developed a novel deep learning based approach to Blind Source Separation (*Cocktail Party*) problem.
- A recurrent neural network namely, *LSTM* was trained on a long dataset of a speech signal convolutively mixed with various sounds. The system is capable of extracting the speech signal from the mixture.

- A comparative study of the popular solutions to the problem was carried out. The accuracy as well as efficiency results obtained from same experiments on different methods were documented.

Minor: Human-Computer Interfacing using *electroencephalography* signal classification

(August - November 2015)
- Built a basic human computer interface using EEG signals to control the state of an attached LED using an Arduino board.
- Recorded EEG signals were preprocessed through CSP spatial filter and an binary SVM classification model was trained on the samples to predict motor imagery classes (left/right hand movement).

Adler: Text Classification API based on *TechTC-300 Test Collection*

(February 2016)
- A ready-to-use text corpus generation engine was developed as an open source python package.
- The final dataset used chi-squared feature selection and *TF-IDF* feature weighting. Classification was performed using a Decision-Jungle classifier in AzureML Studio.

Declutter: OneDrive plugin to automatically organize documents

(September 2015)
Code.Fun.Do. 2015 Winning Entry from IITR. Built a plugin for MS OneDrive to tag documents in a folder based on content and also organize them into categorized subfolders. AzureML based text-categorization API was used to tag content.

Raphael: Classification of paintings based on painting styles and era

(May 2015)
Artificial Neural Networks Course Project under Prof. G.N. Pillai. Built a system to classify paintings taken from wikiart.com into the era and style they belong to, using low level (*color histograms, texture, color saturation*) and high level (*SIFT descriptors*) image features. Multiple classification algorithms such as *SVM, Feed-forward Neural Networks and Random Forests* were used and compared.

Forsit: Recommendation Engine for Mathematical Problem Solving Website

(December 2014)
Built a recommendation engine which can track user activity, correlate it with activity of other users and provide the right set of recommendations about the problems to attempt for a mathematical problem solving platform using content based recommendations and collaborative filtering with SDSLabs.

Codevillage: Platform for algorithmic programming contests

(March 2014)
Developed a PHP web app for hosting algorithmic programming contests and practice problems with SDSLabs. An international level contest, Insomnia was successfully organised on the platform.

Extracurriculars

Developer, SDSLabs, IITR (2013-2016)

Trophy Winner, Srishti 2014 for contribution to SDSLabs projects. SDSLabs is a student group working at achieving technical excellence in field of web development, mobile development, algorithms, machine learning, linux etc.

Chief Web Co-ordinator, Watch Out News Agency (WONA) , IITR (2014)

Worked as Chief Web team co-ordinator for official news magazine of IITR, Watch Out News Agency. Responsible for managing the magazine website.

Co-ordinator, Programming and Algorithms Group, IITR (2014)

Conducted various algorithmic programming open lectures and online contests in campus. Programming and Algorithms group aims at spreading competitive programming culture in IITR.

Member, National Sports Organisation (N.S.O.) (2012-2013)

Basketball Player. Won Inter-Branch Basketball match, 2013.

Personal Details

Father's Name: Mr. Mukesh Jain
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