

MILIND KUDAPA

Senior Undergraduate
Industrial and Production Engineering
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ACADEMIC DETAILS

Year	Degree	Institute
2015-2019	B.Tech in Industrial Engineering	Indian Institute of Technology Delhi
2015	Class XII, Board of Intermediate Education, AP	FIITJEE Junior College
2013	Class X, ICSE	ETASI - Timpany School

SCHOLASTIC ACHIEVEMENTS

- Secured **Top 1%** in Joint Entrance Exam Advanced - 2015 among 150,000 candidates.
- Ranked in **Top 0.01%** among 1.4 million candidates appearing in Joint Entrance Examination(JEE Mains-2015).
- Kishore Vaigyanik Protsahan Yojna (**KVPY**): Cleared the written exam conducted by DST, Govt. of India.

RELEVANT PROJECTS

Prediction of Outcomes in Patients with Brain Haemorrhage

Prof. Varun Ramamohan

Bachelor's Thesis Project

July 2018-Present

- Joint collaboration of **IIT** with the **All India Institute of Medical Sciences (AIIMS), Delhi**.
- Working on an algorithm to predict the risk of Vasospasm in patients with Sub-Arachnoid Haemorrhages.
- Data of 130 patients provided by AIIMS which includes **CT brain scans** and well as **Electronic Health Records**.
- Successfully developed a **segmentation algorithm** to segment out the regions of blood in the brain.
- Prediction of the **Fisher Grade** of the haemorrhage based on the size of the bleed.
- A proposed grant of **\$30,000** from **IIT - AIIMS** joint research programme over a period of 2 years.

Named Entity Recognition in Electronic Health Records

Prof. Varun Ramamohan

Summer Project

May 2018-July 2018

- Built a **Named Entity Recognizer** on patient data available from Electronic Health Records.
- Made and tested to work on patients with **Brain Haemorrhages**.
- The NER tagger can extract **Name, Condition, Procedure done, Post Operative Diagnosis** in patients.
- The NER goes on to **create a summary** of the patient from unstructured text.
- Creates a **feature set in machine readable format** that can be used in other Machine Learning tasks.
- Currently working on including even more entities to improve its performance.

Automatic Sarcasm Detection

Prof. Mausam

Natural Language Processing Project

Jan 2019-Present

- Currently building an **automatic classifier** that can **detect sarcasm in comments**.
- Using the publicly available **sarcasm dataset, SARC (Khodak et al., 2017)** with more than a million comments.
- Implementing an arch. **CASCADE: Contextual Sarcasm Detection in Online Discussion Forums** (Harariza et al., 2018)
- Network utilizes both **content and context information** required for sarcasm detection.
- Model **stylographic and personality details** of users along with content in the comment.
- Instead of using **Char CNNs** as the original authors, we are using **LSTMs** to better capture **long term dependencies**.

OTHER PROJECTS

Domain Adaptation of Word Vectors

Prof. Mausam

Natural Language Processing Project

Jan-Mar 2019

Made use of Word2Vec (Mikolov et al., 2013) pretrained on Google News corpus and fine tuned on dataset from different domain. Given a sentence with one word masked out, task is to predict the word. Modelled context by taking a window size of two around the masked word to predict the masked word.

Salt Identification Challenge

Prof. Rahul Garg

Machine Learning Project

Sep-Nov 2018

Took part in the Kaggle: TGS Salt Identification Challenge. Segmentation of Salt Patches present in the image using U-Net Segmentation Architecture (Ronneberger et al., 2015). Experimented with various encoder architectures like ResNet34, ResNet152(pretrained) etc. Added Squeeze and Excitation blocks and hypercolumns in both encoder and decoder blocks. Achieved top 10% in the final leaderboard.

Impact of Refugee Intake of various countries on Unemployment

Prof. Ankush Agarwal

Econometrics Project

Sep-Nov 2017

Analysed the data obtained from ILO, UNHCR, UN databases to see the impact of large refugee intake on the unemployment indicators and thus the economy of the countries. Hypothesis testing for four countries, US, Germany, Pakistan, Turkey.

RELEVANT COURSES

- **Computer Science and Mathematics:**

Natural Language Processing*, Machine Learning, Data Structures & Algorithms*, Introduction to Statistics, Numerical Methods in Computation, Calculus, Linear Algebra

- **Industrial Engineering:** Operations Research, Stochastic Modelling and Simulation, Manufacturing System Design*.

**Courses currently pursuing*

TECHNICAL SKILLS

- **Programming Languages:** C, C++, Python, Java, R, Matlab.

- **Frameworks:** OpenCV, Git, Tensorflow, Keras, PyTorch, Sci-kit Learn, NLTK, Gensim, SpaCy.

- **Cloud Computing:** Microsoft Azure, AWS, High Performance Computing (HPC).

EXTRA CURRICULAR ACTIVITIES

- Production Head, IIT Delhi OnAir, IIT's very own campus radio.
- **Volunteer, Shiv Ganga Ashram, Jhabua:** Worked with the NGO for upliftment of Bhil tribes living in the region.
- Part of the Institute Music Band as a guitarist. Participated in various competitions.
- Amateur Photographer, love shooting landscapes and street portraits.
- Frequently travelled to various parts of the country to get a direct experience into peoples lives.
- Love hiking the Himalayas. Have gone on various treks in the last four years.