

# MILIND KUDAPA

Senior Undergraduate  
Industrial and Production Engineering  
Indian Institute of Technology, Delhi

kudapamilindchowdary@gmail.com  
[github.com/milindkudapa](https://github.com/milindkudapa)  
+91-8790048835

## ACADEMIC DETAILS

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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

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- Secured **Top 1%** in Joint Entrance Exam Advanced - 2015 among 150,000 candidates.
- Ranked in **Top 0.25%** 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

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### 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.

### 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)**
- Modelling **stylographic and personality details** of users along with **content** in the comment.
- Instead of using **Char CNNs** like the authors, we are using **LSTMs** to better capture **long term dependencies**.
- Using **BERT embeddings** in place of **FastText** embeddings for better representation.
- Currently achieved an **accuracy of 79.1%** which is an improvement of **3% over the SOTA**.

### 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.

## OTHER PROJECTS

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### Detection of Tuberculosis, Lung Cancer and Sarcoidosis

Prof. Varun Ramamohan

*Design Project*

*Jan 2019-Present*

Detection of TB, Lung Cancer and Sarcoidosis from Ultrasound images of Lymph Nodes. Data obtained from the All India Institute of Medical Sciences (AIIMS), Delhi. Currently in the process of developing a Convolutional Neural Network (CNN) architecture that can do multi class classification amongst the three conditions.

### 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.

## RELEVANT COURSES

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- **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

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- **Programming Languages:** C, C++, Python, Java, R, Matlab.
- **Frameworks:** Tensorflow, Keras, PyTorch, Sci-kit Learn, NLTK, Gensim, SpaCy, OpenCV, Git
- **Cloud Computing:** Microsoft Azure, Amazon Web Services (AWS), High Performance Computing (HPC).

## EXTRA CURRICULAR ACTIVITIES

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- Production Head, IIT Delhi OnAir, IIT's very own campus radio.
- **Volunteer, Shiv Ganga Ashram, Jhabua:** Worked with the NGO for water conservation in Bhil 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 exposure into peoples lives.
- Love hiking the Himalayas. Have gone on various treks in the last four years.