

# Thanmay Jayakumar

[/ThanmayJ](#) | [/thanmay](#) | [ThanmayJ.GitHub.io](#) | [thanmayjayakumar@gmail.com](mailto:thanmayjayakumar@gmail.com)

## EDUCATION

**VISVESVARAYA NATIONAL INSTITUTE OF TECHNOLOGY** Nagpur, India | 2019 - May 2023  
(B.Tech) Electronics & Communication Engineering

**GLOBAL INDIAN INTERNATIONAL SCHOOL**  
Singapore | 2019

## COURSEWORK

- NVIDIA's Building Transformer-Based Natural Language Processing Applications [\[Course\]](#)
- Stanford CS224n: NLP with DL [\[Course\]](#)
- Neural Networks and Deep Learning [\[Course\]](#)
- Machine Learning with Python
- CS7015: Deep Learning [\[Course\]](#)
- Improving Deep Neural Networks
- Convolutional Neural Networks [\[Course\]](#)
- Sequence Models [\[Course\]](#)
- Introduction to Entrepreneurship
- Object Oriented Programming
- Linear Algebra • Probability Theory

## SKILLS

### PROGRAMMING LANGUAGES

• Python • C • C++ • MATLAB • Perl (basic)

### LIBRARIES

• PyTorch • NumPy • SciPy • Pandas • Keras

### SOFTWARE/TOOLS

• Git • Bash • MS Office • Adobe Photoshop  
• LaTeX • HuggingFace • OS: Windows, Linux

### LANGUAGES

Fluent	English, Tamil, Hindi, Telugu
Intermediate	German, Malayalam, Kannada
Elementary	Chinese, Malay, Sanskrit, Arabic

## EXTRACURRICULARS

- **Workshop Coordinator:** Organized and volunteered various workshops conducted under IEEE VNIT Student Chapter Nagpur.
- **IvLabs Member:** Core Member of the AI and Robotics Lab of VNIT, Nagpur.
- **Graphic Designer:** Member of the Magazine & Literary Club, VNIT Nagpur.
- **Piano & Music Theory:** Grade 5 - Associated Board of the Royal Schools of Music (ABRSM).

## HONORS AND AWARDS

- Awarded the **D&I full subsidy** for attending EMNLP 2022 in-person at Abu Dhabi, UAE.
- Selected in the [SURGE internship program](#) at IIT Kanpur for the year 2022. [\[Certificate\]](#)

## EXPERIENCE

### RESEARCH INTERN [\[Project Report\]](#) [\[Presentation\]](#)

IIT Kanpur, India | May - Aug 2022

- Aimed at solving the task of **Spoken Term Detection** (STD) to retrieve queried speech files in an audio database.
- Implemented three different approaches to STD for query localization, classification and location suggestion in a database.
- Analyzed an optimal combination of the above, in order to work towards building a language-agnostic system.

## RESEARCH WORK

1. [\[Paper\]](#) **Attending to Transforms: A Survey on Transformer based Image Captioning:** Kshitij Ambilduke, Thanmay Jayakumar, Luqman Farooqui, Himanshu Padole, Anamika Singh. (PCEMS 2023)
2. [\[Paper under review\]](#) Enhanced word-embedding models by fusing linguistic structure for Open Information Extraction.

## PROJECTS

### MULTI-CHOICE QUESTION ANSWERING [\[GitHub\]](#)

IvLabs, VNIT, India | July 2023

- Deployed PyTorch's **DistributedDataParallel** and **FullyShardedDataParallel** with the **Hugging Face** Transformers framework for **RoBERTa** on a two-GPU parallelism setup.
- Achieved an accuracy of 85.6% using Sequence (Binary) Classification and 83.6% using Multiclass Classification.

### AUTOMATIC IMAGE CAPTIONING [\[GitHub\]](#)

IvLabs, VNIT, India | Mar 2023

- Surveyed image captioning methods for our thesis titled "Deep Learning techniques for Automatic Image Captioning"
- Investigated captioning models with a **ResNet** image encoder and various decoders in PyTorch using the Flickr caption dataset.
- Examined the model results on **BLEU**, **METEOR** and **ROUGE**.

### STATISTICAL MACHINE TRANSLATION [\[Presentation\]](#)

LTRC, IIIT Hyderabad, India | July 2022

- Work done in IIIT-Hyderabad's **Advanced Summer School on Natural Language Processing** [\[Course\]](#) [\[Certificate\]](#)
- Investigated the effects of different evaluation metrics during the tuning phase of an SMT model, on a subset of the IndicWAT corpus.

### SENTIMENT ANALYSIS [\[GitHub\]](#)

IvLabs, VNIT, India | Dec 2021

- Aimed at the automatic determination of polarity in text.
- Compared the results of different architectures such as **LSTM**, **FastText** and **BERT** on the IMDb dataset.

### NEURAL MACHINE TRANSLATION [\[GitHub\]](#)

IvLabs, VNIT, India | Jun 2021

- Studied papers presenting novel architectures for NMT.
- Implemented Encoder-Decoder (**Transformer**) architectures in PyTorch using the Multi30k Dataset for German-English.
- **Low-resource NMT (Literature Review):** [\[Presentation\]](#) [\[Notes\]](#)