



# Thanmay Jayakumar

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## 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
- Convolutional Neural Networks [\[Course\]](#)
- Sequence Models [\[Course\]](#)
- Introduction to Linguistics [\[Course\]](#)
- Introduction to Entrepreneurship
- Linear Algebra • Computer Networks
- Data Structures & Algorithms

## SKILLS

### PROGRAMMING LANGUAGES

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

### LIBRARIES

• PyTorch • Tensorflow • NumPy • SciPy • Pandas

### 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, Sanskrit, Persian, 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.

### SUMMER RESEARCH INTERN [\[GitHub\]](#)

IvLabs, VNIT, India | Jul - Aug 2020

- Employed various Signal Processing techniques such as MFCCs and LPCs and modeled a **Speaker Recognition** system in NumPy.
- Achieved an accuracy of 100% for both MFCC and LPC using a set of 8 speakers from the CSTR VCTK Corpus.

## PROJECTS

### AUTOMATIC IMAGE CAPTIONING Aug 2022 - Present

- Surveyed vision-text architectures for Image Captioning.
- Working on augmenting **multimodal** encoder-decoder models.

### OPEN INFORMATION EXTRACTION Aug 2022 - Present

- Enhanced **word-embedding** models to include linguistic structure.
- Working towards publishing the results at a relevant conference.

### 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.
- Compared the results of models tuned on BLEU, chrF, TER, WER and PER 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 Machine Translation (Review):** [\[Presentation\]](#) [\[Notes\]](#)

### NAME GENERATION [\[GitHub\]](#)

IvLabs, VNIT, India | May 2021

- Generated dinosaur names by developing a character-level Language Model using PyTorch.
- Compared the results of Vanilla RNN, LSTM and GRU.