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 Entrepreneurship
- Linear Algebra • Probability Theory
- Data Structures & Algorithms
- Computer Networks

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.

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.

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

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 NMT (Literature Review):** [Presentation] [Notes]

NAME GENERATION [GitHub]
IvLabs, VNIT, India | May 2021

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