

ARIJIT GUPTA

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ACADEMIC QUALIFICATION

The University of Sheffield, UK

M.Sc. in Computer Science with Speech and Language Processing

September 2024 - September 2025

BITS Pilani, Goa, India

B.E. in Electronics and Instrumentation

August 2018 - July 2022

WORK EXPERIENCE

ZS Associates, Advanced Data Science Associate (Bangalore)

July 2022 - August 2024

- Designed and deployed scalable NLP pipelines using Haystack, LangChain and PyTorch
- Developed a GenAI-based side-effect analysis system to analyze 5K+ patient reports, leveraging prompt chaining and LLM scoring heuristics.
- Built a few-shot learning pipeline for extracting and segmenting medical entities from 10K+ physician notes using extractive QA and few-shot RAG based methods.
- Collaborated with product teams to define metadata schema and enrich text data for LLM downstream tasks.
- Supported LLM evaluation through quality scoring metrics and comparisons between chained prompt version

RESEARCH EXPERIENCE

Title: Noun Gender Prediction from Semantic v/s Formal Cues

[The University of Edinburgh, Edinburgh]

August 2021 - May 2022

Summary/Description:

Independently trained vector representations based on the contextual and formal properties of words to compare their usability in a task of noun gender prediction. The experiments suggested that semantic representations are more reliable when only the gender part of the word vector is used to represent it. Employed a novel approach of using gender debiasing methods to extract the gender information which showed that human reliance on semantic cues over phonological ones can be seen in natural language models as well.

Title: Transformer-based Methods for Monocular Depth Estimation (Independent Project)

[BITS Pilani, Goa]

August 2020 - July 2022

Summary/Description:

Implemented non-convolutional vision models and evaluated their performance in inferring depth information from a single RGB image to infer scene geometry in 2D. Analyzed to investigate the efficiency of these models for edge devices and showed that a transformer-based architecture outperformed almost all convolutional networks with a similar number of parameters. As these models do not downsample the input across layers, we show that the increased global awareness of the model leads to a direct improvement in performance. [\[Paper\]](#)

Title: Diachronic Distributed Word Representations as Models of Lexical Development

[BITS Pilani, Goa]

June 2020 - May 2021

Team Size: 2

Role: Team Co-Lead

Summary/Description:

Explored the usability of diachronic distributed word representations in cognitive modeling and analysis of the lexical development in children. used temporally sliced corpus to learn distributed word representations of child-speech and child-directed speech under a curriculum-learning setting. This work demonstrates the ease of usage and effectiveness of diachronic distributed word representations in modeling lexical development. [\[Paper\]](#)

INTERNSHIPS

Microsoft, Software Engineer Intern (Hyderabad)

May 2021 - July 2021

- Contributed to adding voice skills to a state-of-the-art as a part of the Microsoft Search, Assistance, and Intelligence team. Developed the complete pipeline for new, essential features to the bot, using TypeScript and Express to communicate with the bot and YAML to write training data

Microsoft, Software Engineer Intern (Hyderabad)

May 2020 - July 2020

- Selected as one of the 33 second-year interns among all 500+ candidates
- Migrated a static website to a dynamic website which implemented systematic polling of APIs and real-time updates of components in ReactJS and deployed the web service on Azure

TECHNICAL SKILLS

- Programming Languages:** Python (advanced), C++ (advanced), C# (intermediate), Javascript (intermediate), Typescript (intermediate)
- Tools:** Git, HuggingFace, Shell, LaTeX, MATLAB, HuggingFace
- Frameworks:** PyTorch, TensorFlow, Keras, Angular, ReactJS

COURSEWORK

ML and Adaptive Intelligence, Natural Language Processing, Speech Technology, Scalable Machine Learning, Text Processing, Speech Processing, Team Software Project, Object Oriented Programming, Data Structures and Algorithms, Discrete Mathematics

CERTIFICATIONS/WORKSHOPS/ADDITIONAL COURSES:

- 60th Annual Meeting of the Association for Computational Linguistics (ACL '22), May 2022, Organised by The Association for Computational Linguistics. Presented models of child lexicon development at a student research workshop.
- International CCCP (Cognition, Communication, Computation, and Perception) Symposium, Dec 2020, organized by The Institute for Cognitive Neuroscience, Higher School of Economics, Moscow. As one of the selected speakers at the iBrain Erasmus+ round-table, spoke about the issues in the availability of transcribed child speech data.
- Research Week with Google, Feb 2022, Organised by Google Research, India. Among the 50 participants selected as part of the NLU track across undergraduate, master's, and Ph.D. students across India

ACHIEVEMENTS/CO-CURRICULAR/EXTRACURRICULAR

- First Runner-Up at the Global PyTorch Summer Hackathon 2020, August 2020. First Runners-Up in Web/Mobile Application Category out of 2,500 participants from 114 different countries. [\[Code\]](#)
- OpenCV Spatial AI Competition, 2021. Among the top 210 finalists from over 1500 submissions worldwide and selected as one of the 25 general teams in the Central and South Asia Region.
- First Runner-Up at Microsoft CodeFunDo++ Hackathon, July 2019. Built a web and mobile application for secure online voting using blockchain. [\[Code\]](#)