

# DEVANSH JAIN

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## EDUCATION

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### Birla Institute of Technology and Science (BITS), Pilani

Aug 2018 – Present

M.Sc. Economics and B.E. Computer Science, *GPA: 8.94 / 10*

Pilani, India

**Relevant Coursework:** Computer Programming, Data Structures and Algorithms, Database Systems, Object Oriented Programming, Linear Algebra, Calculus, Probability and Statistics, CS224n (*Stanford University*)

## PUBLICATIONS

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### [1] Distilling Hypernymy Relations from Language Models: On the Effectiveness of Zero-Shot Taxonomy Induction

*Under review at ACL Rolling Review*

[Devansh Jain](#) and Luis Espinosa-Anke.

### [2] MedSkip: Medical Report Generation Using Skip Connections and Integrated Attention

*Computer Vision for Automated Medical Diagnosis, ICCV'21 Workshop (Accepted)*

Esha Pahwa\*, Dwij Mehta\*, Sanjeet Kapadia\*, [Devansh Jain](#)\* and Achleshwar Luthra.

## EXPERIENCE

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### Language Technology Group, Universität Hamburg

Nov 2021 – Present

Research Intern, Advisors: [Prof. Chris Biemann](#), [Dr. Meriem Beloucif](#)

Hamburg, Germany

- Working on improving the **semantic capabilities** of **pretrained language models**
- Investigating the ability of **BERT** to capture **shallow semantics** using **prompting** and **semantic role labeling**

### Advanced Data Analytics and Parallel Technologies Lab, BITS Pilani

Sep 2021 – Present

Research Assistant, Advisor: [Prof. Poonam Goyal](#)

Pilani, India

- Surveying literature for **knowledge graphs** of different modalities and techniques to combine them
- Studied and implemented fundamental **graph neural nets (GNN, GCN)**; analysed **applications in link prediction**

### Web Intelligence and Social Computing Lab, BITS Pilani

Jun 2021 – Sep 2021

Research Assistant, Advisor: [Prof. Yashvardhan Sharma](#)

Pilani, India

- Developed a closed-domain **FAQ retrieval system** for FAQIR dataset
- Utilized **cosine-similarity scores** on **contextual embeddings** of user queries and FAQs for **unsupervised** retrieval
- Fine-tuned BERT** to match user queries to FAQs for re-ranking FAQ pairs retrieved using **BM25 scores**

### Computer Vision Research Society, BITS Pilani

Jun 2021 – Aug 2021

Team Lead

Pilani, India

- Introduced MEDSKIP, a **novel CNN-Transformer** based architecture for medical report generation
- Incorporated **HRNet** with **skip connections** and **CBAM** for visual extractor; used **transformer** for report generation
- Established new **state-of-the-art** for PEIR Gross dataset; performed competitively for IU X-Ray dataset

### Cardiff NLP Group, Cardiff University

May 2021 – Sep 2021

Research Intern, Advisor: [Prof. Luis Espinosa-Anke](#)

Cardiff, Wales

- Developed a **zero-shot** system for construction of **domain-specific taxonomies** for TExEval datasets
- Utilized **prompting** and **sentence-scoring** techniques to generate hypernyms using **pretrained language models**
- Analyzed factors that dictate downstream performance, such as **statistical** and **semantic** properties of prompts

### CoffeeBeans Consulting

May 2020 – Jun 2020

Software Development Intern

Bangalore, India

- Worked on **flagship product WRU.ai**, a recommendation engine for news articles
- Implemented a dump job for recommendation data to **increase efficiency** and **reduce storage** required by the system
- Recognized by institute for exemplary performance; awarded **Special Scholarship for Internship**

## RELEVANT PROJECTS

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### Product Classification

Apr 2021

- Built models to predict **primary category of Flipkart products** using their description; achieved accuracy of **97.4%**
- Experimented with **Naive Bayes classifier**, **multi-layered LSTMs** and **fine-tuned BERT** to classify products

## TECHNICAL SKILLS

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**Languages:** Python, Java, C, C++

**Libraries and Frameworks:** PyTorch, Keras, Pandas, Numpy, Flask, fast.ai