

# PRANAYDEEP SINGH

(+91)8839912366 ◊ pranaydeep.singh@ugent.be

## WORK EXPERIENCE

---

**Language Translation Technology Team, Ghent University** December 2020 - Present  
*Doctoral Candidate*

- Supervised by Prof. Dr. Els Lefever and Dr. Orphe De Clercq, on multi-lingual methods that focus on lack of supervision

**Language Translation Technology Team, Ghent University** August 2019 - Present  
*Research Assistant*

- Working on multi-lingual methods for creating language invariant representations, to learn to classify emotion, independent of language  
Thesis: "Exploring Applications of Cross-Lingual Modelling for Code-Mixed Text"

**Paralleldots Pvt Ltd, India** January 2018 - August 2018  
*Computer Vision and NLP Intern*

- Worked on Large-Scale Document Layout Understanding in Few-Shot Scenarios using a combination of Object Detection and OCR

## EDUCATION

---

**Birla Institute of Technology and Science Goa Campus, Pilani, India** August 2014 - 2019  
Masters in Science  
Department of Biological Sciences

## CAREER OBJECTIVE

---

To advance language understanding and analysis in low-resource languages, and exploring methods for the same which involve minimal supervision

## PROJECTS

---

### Neocoretex - Understanding Decision Making with LSTMs and EEG

Work on predicting EEG based features in Audio Tracks using Deep Learning, thus working towards a perceptual recommender system

### PyDuino - Interactive Python for Hardware esp. Arduino

Open Source Python Library to use Python with Hardware, mainly Arduino Boards. Python unlike C/C++ is interpreted, so it can be extensively used for debugging and testing before burning compiled code to a board

## TECHNICAL STRENGTHS

---

<b>Programming Languages</b>	Python, C/C++, Bash, Java, Lua
<b>Frameworks and Libraries</b>	Torch, Tensorflow, Keras, NLTK, Spacy, Gensim

## PUBLICATIONS

---

**LT3 at SemEval-2020 Task 9: Cross-lingual Embeddings for Sentiment Analysis of Hinglish Social Media Text** (Accepted at International Workshop on Semantic Evaluation, co-located with COLING 2020)

We investigated two approaches to solve the task of Hinglish sentiment analysis. The first approach uses cross-lingual embeddings resulting from projecting Hinglish and pre-trained English FastText word embeddings in the same space. The second approach incorporates pre-trained English embeddings that are incrementally retrained with a set of Hinglish tweets.

**LT3 at SemEval-2020 Task 8: Multi-Modal Multi-Task Learning for Memotion Analysis** (Accepted at International Workshop on Semantic Evaluation, co-located with COLING 2020)

analysis. In this paper, we describe our contribution to the SemEval- 2020 Memotion Analysis Task. We propose a Multi-Modal Multi-Task learning system, which incorporates memembeddings, viz. joint text and vision features, to learn and optimize for all three Memotion subtasks simultaneously.

**Sentiment Analysis for Hinglish Code-mixed Tweets by means of Cross-lingual Word Embeddings** (Accepted at Workshop on Computational Approaches to Linguistic Code-switching, LREC 2020)

We demonstrate that incorporating cross-lingual embeddings for code-mixed SA improves the results (F1-score of 0.631 versus monolingual baseline of 0.616), without any additional supervision required to train the cross-lingual embeddings

**Identifying Cognates in English-Dutch and French-Dutch by means of Orthographic Information and Cross-lingual Word Embeddings** (Accepted as Poster Presentation, LREC 2020)

Improving performance of cognate detection systems by combining traditional orthographic information with semantic information from unsupervised alignments

**Multi-domain Document Layout Understanding using Few Shot Object Detection**

<https://arxiv.org/abs/1808.07330> (Short Paper, VISAPP 2020)

Document layout understanding using a simple algorithm which generalizes across multiple domains while training on just few examples per domain

**Perceptual Encoding of EEG Features Using LSTMs** (Under Review Closed Access)

Work on predicting EEG based features in Audio Tracks using Deep Learning, thus working towards a perceptual recommender system

## REFERENCES

---

**Prof. Dr. Els Lefever** (Supervisor)

Language Translation and Technology Team, University of Ghent  
els.lefever@ugent.be

**Muktabh Srivastava** (Supervisor)

Co-founder and Technology Lead, Paralleldots Pvt. Ltd.  
muktabh@paralleldots.com