Advances in Natural Language Processing

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People-Centred AI UNIVERSITY OF SURREY

CENTRE FOR TRANSLATION STUDIES UNIVERSITY OF SURREY

Ongoing Projects

With collaborations from researchers in academia and industry alike:

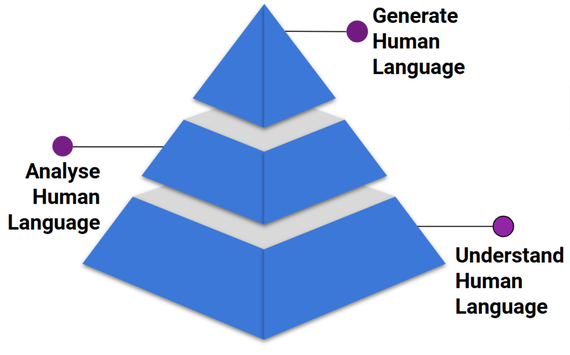
- Evaluating **Machine Translation Quality**
- Automatic Post-editing of Machine Translation
- Identify **Aggressive / Offensive** Language
- **Acronym Expansion** in Scientific Domain
- **NLP** applied to the **Legal** Domain
- **Sarcasm** and **Humour Understanding**
- Cognitively-aided Language Understanding

Language Understanding

→ Natural Language Processing (NLP) is moving at a fast pace. **Language Understanding is a core sub-area of NLP**, which has seen tremendous advances since the advent of pre-trained 'foundation models'.

→ Surrey is leading research efforts on many fronts in this direction. **Our interdisciplinary approach addresses NLU problems in multiple domains** such as social, legal and scientific [1].

→ Using **state-of-the-art NLU**, we are naming entities [2] and expanding acronyms [1] while estimating the quality of machine translation [3]. That didn't make sense? **Read our papers!**



Collaborations

Our diverse NLP interests have led to exciting collaborations with researchers worldwide!

NLP Café

The **most popular café in Guildford!** We roast our beans once a week for an hour with many researchers from both NLP and non-NLP spaces. We started as a reading group but evolved into something more. In one year, we undertook a deep learning module, discussed interesting programming libraries, and looked at NLP advancements through a critical lens; all in the café.
Are you interested in joining us? **Scan the QR code to know more!**

Surrey Natural Language Processing

https://github.com/surrey-nlp https://huggingface.co/surrey-nlp

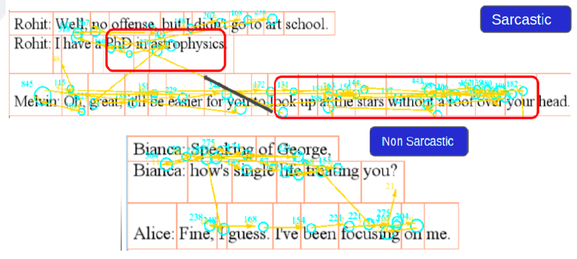
Research Advancements

→ We released the **most extensive acronym identification and expansion dataset** in the scientific domain [1]. Using pre-trained language models, we achieve SoTA performance on the task! We also released the **most comprehensive Hindi Named Entity Recognition dataset** with the CFILT [2] Lab.

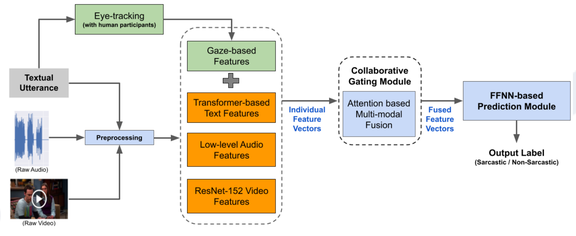
→ Ongoing investigations report **SoTA QE scores** using our **novel multi-task learning based approach**.

→ We are curating **QE data for six new language pairs** investigating the MT performance from English to Indian Languages. Last year, we co-organized the QE and APE shared tasks while **contributing two datasets**. Additionally, we are creating **APE data for two**, and **MQM evaluation data for one language pair**.

Multimodality



⇒ **Cognitive Data as a New Modality**



⇒ **Novel Approach / Multimodal Sarcasm**

Open Access

We are committed to open-access research in alliance with the UKRI open-access policy. Our **datasets**, like *PLOD, HiNER, S3D* are all **publicly available** along with the **code** and the **models** generated from our research. Check out our and !

Other Members

→ Dr Félix do Carmo, Prof Nishanth Sastry, and Prof Helen Treharne

→ Dr Leonardo Zilio, and Dr Hadeel Saadany

→ Shenbin Qian, Archchana Sindhujan, Sourabh Deoghare, Vibhor Agarwal, Param Choudhary, and Jordan Painter

Significant Publications

[1] L Zilio, H Saadany, P Sharma, D Kanojia, and C Orăsan. PLOD: An abbreviation detection dataset for scientific documents. In *Proceedings of the 13th LREC*, June 2022.

[2] R Murthy, P Bhattacharjee, R Sharnagat, J Khatri, D Kanojia, and P Bhattacharyya. HiNER: A large Hindi named entity recognition dataset. In *Proceedings of the 13th LREC*, June 2022.

[3] D Kanojia, M Fomicheva, T Ranasinghe, F Blain, C Orăsan, and L Specia. Pushing the right buttons: Adversarial evaluation of quality estimation. In *Proceedings of the 6th WMT*, November 2021.

Want to know more?

http://dipteshkanojia.github.io
https://dinel.org.uk/

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