

ADVANCES IN NATURAL LANGUAGE PROCESSING

Dr Diptesh Kanojia, Prof Constantin Orăsan

Surrey Institute for People-centred AI, Centre for Translation Studies
d.kanojia@surrey.ac.uk, c.orasan@surrey.ac.uk



People-Centred AI
UNIVERSITY OF SURREY



ONGOING PROJECTS

With collaborations from researchers in academia and industry alike:

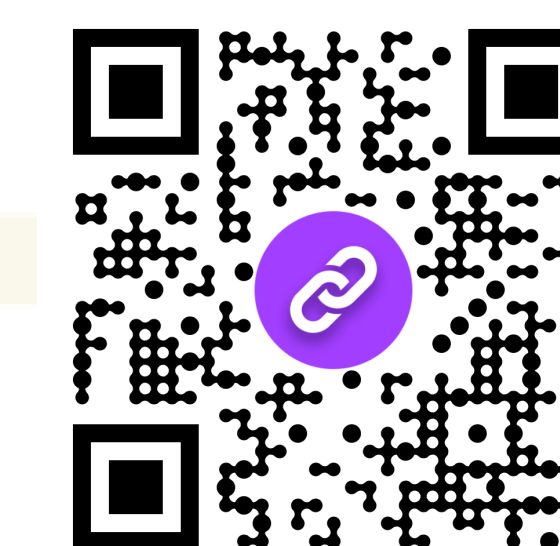
- Evaluating **Machine Translation Quality**
- Automatic Post-editing of Machine Translation
- Identify **Aggressive / Offensive Language**
- **Acronym Expansion** in Scientific Domain
- **NLP** applied to the **Legal Domain**
- **Sarcasm** and **Humour Understanding**
- Cognitively-aided Language Understanding

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!**

OPEN ACCESS

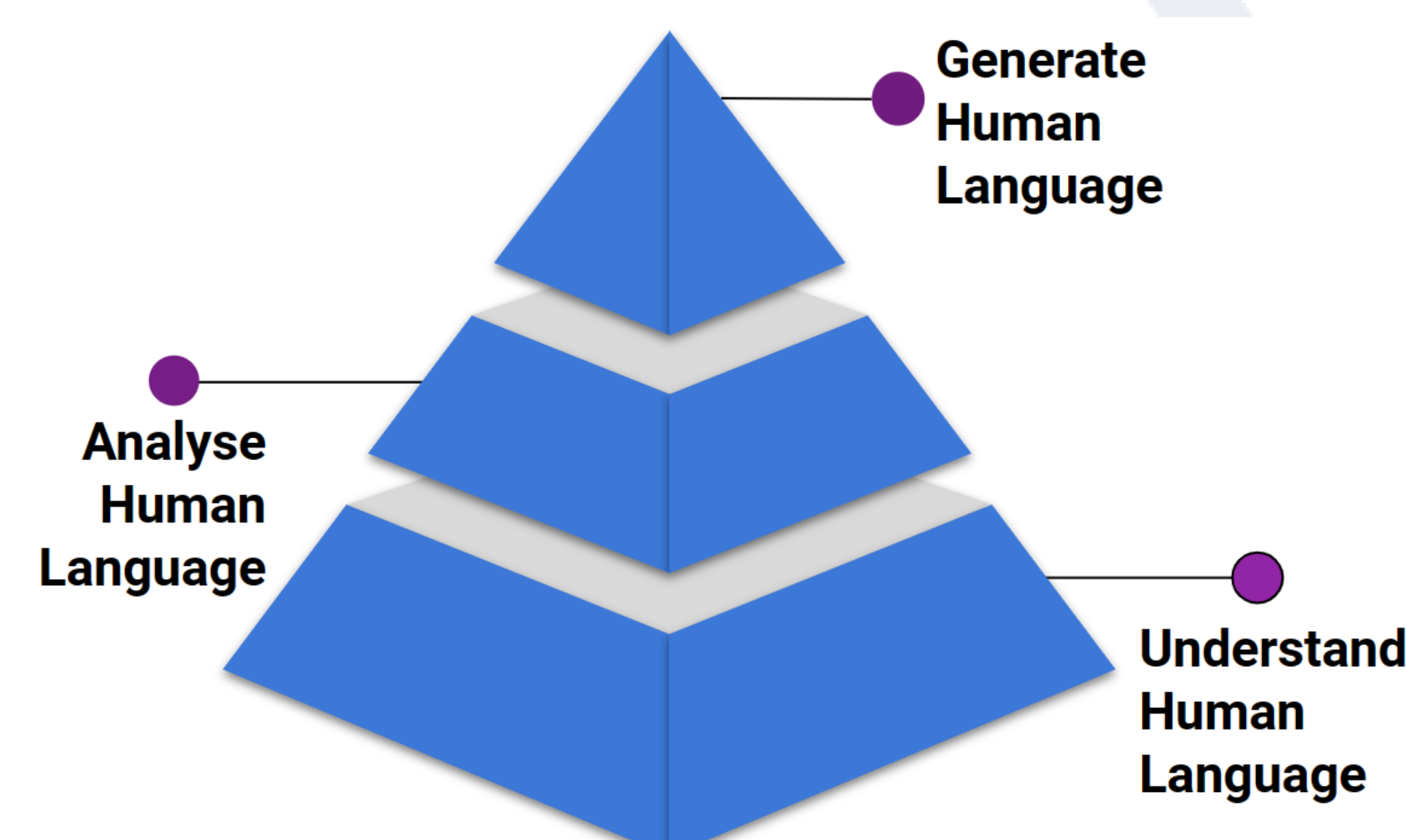
We are committed to open-access research in alliance with the UKRI open-access policy. Our **datasets**, like *PLOD*, *HiNER*, *S3D* are all **publicly available** along with the **code** and the **models** generated from our research. Check out our 📄 and 😊!

OTHER MEMBERS

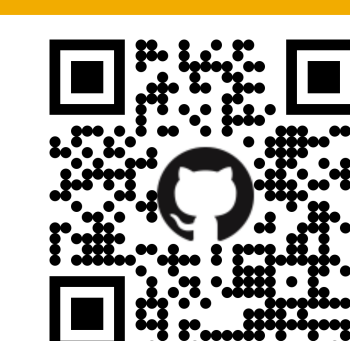
- Dr Félix do Carmo, Prof Nishanth Sastry, and Prof Helen Treharne
- Dr Leonardo Zilio, and Dr Hadeel Saadany
- Shenbin Qian, Archchana Sindhuhan, Sourabh Deoghare, Vibhor Agarwal, Param Choudhary, and Jordan Painter

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!**

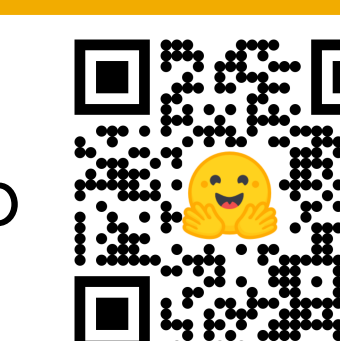


SURREY NATURAL LANGUAGE PROCESSING



<https://github.com/surrey-nlp>

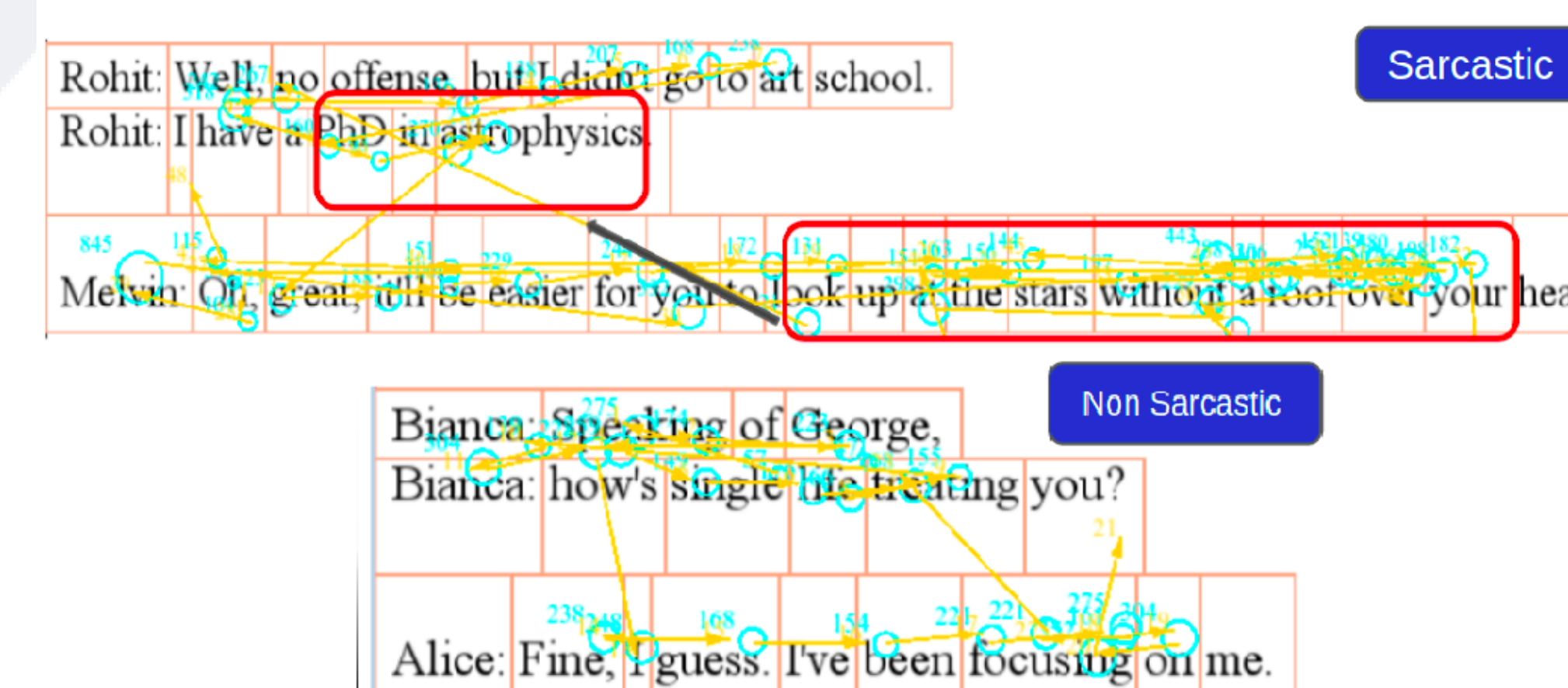
<https://huggingface.co/surrey-nlp>



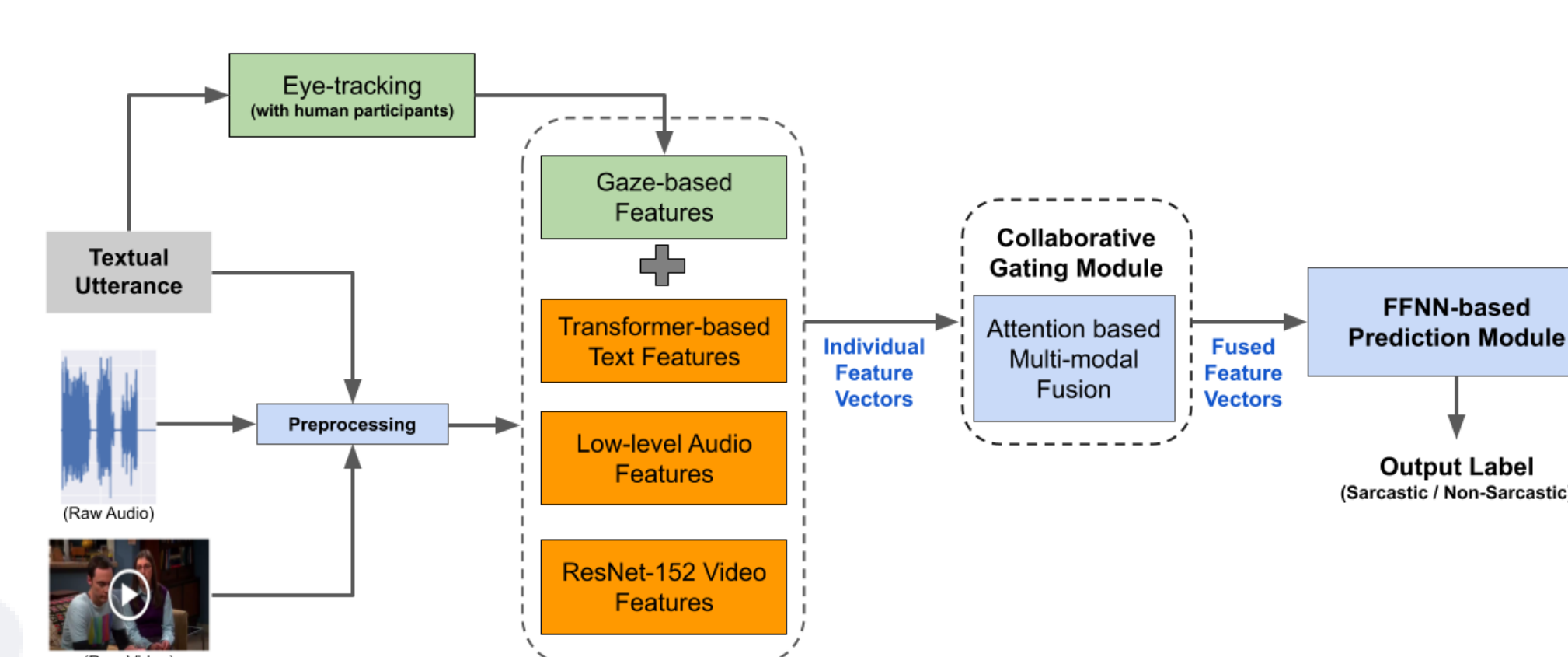
RESEARCH ADVANCEMENTS

- 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**

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/>



UNIVERSITY OF
SURREY