JENNIFER C. WHITE

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EDUCATION

University of Cambridge *October 2020 - Present*
PhD Computer Science
Co-supervised by Simone Teufel (University of Cambridge) and Ryan Cotterell (ETH Zurich)
ESRC Scholarship
Working on Natural Language Processing, focusing on measuring the inductive biases of language models and studying compositional generalisation using group-equivariant networks.

University of Cambridge *October 2019 - June 2020*
MPhil Advanced Computer Science Classification: Distinction
Cambridge Trust DeepMind Scholar
Dissertation: Using kernel methods to introduce non-linearities into linear probes without increasing probe complexity (Accepted to NAACL 2021)
Other Projects:

- Investigating methods for natural language generation from a meaning representation (for module L101);
- Investigating effects of combining morphological and phonological data and investigating whether this can be used to improve performance on G2P and morphological inflection generation systems (for module R250);
- Performing quantitative and qualitative evaluation of two dependency parsers (for module L95);
- Investigating methods for mitigating race-, age- and gender-based biases in affect recognition systems (for module L44).

University of Warwick *September 2012 - July 2016*
MMathPhys Mathematics and Physics Classification: 1st Class
Master's Project: Implemented a module in Macaulay2 (a Computer Algebra System) to generate Normal Toric Varieties with Picard number 3, based on an existing classification.

OTHER RESEARCH EXPERIENCE

ETH Zurich August 2020 - September 2020
Research Intern

Working with Ryan Cotterell. Project investigating novel methods for investigating inductive biases of language models.

RESEARCH INTERESTS

- Inductive Biases of Language Models;
- Compositional Generalisation;
- Group-Equivariant Models;
- Computational morphology;
- Grounded language models;
- Bias in NLP models.

PUBLICATIONS

Jennifer White and Ryan Cotterell. 2021. **Examining the Inductive Bias of Neural Language Models with Artificial Languages**. In *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics.*

Jennifer White, Tiago Pimentel, Naomi Saphra, and Ryan Cotterell. 2021. **A Non-Linear Structural Probe**. In *Proceedings of the 2021 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies.*

Tian Xu, **Jennifer White**, Sinan Kalkan, and Hatice Gunes. 2020. **Investigating Bias and Fairness in Facial Expression Recognition**. In *Proceedings of the 16th European Conference on Computer Vision Workshops.*

Ekaterina Vylomova, **Jennifer White**, Elizabeth Salesky, Sabrina J Mielke, Shijie Wu, Edoardo Ponti, Rowan Hall Maudslay, Ran Zmigrod, Josef Valvoda, Svetlana Toldova, Francis Tyers, Elena Klyachko, Ilya Yegorov, Natalia Krizhanovsky, Paula Czarnowska, Irene Nikkarinen, Andrew Krizhanovsky, Tiago Pimentel, Lucas Torroba Hennigen, Christo Kirov, Garrett Nicolai, Adina Williams, Antonios Anastasopoulos, Hilaria Cruz, Eleanor Chodroff, Ryan Cotterell, Miikka Silfverberg and Mans Hulden. 2020. **SIGMORPHON 2020 Shared Task 0: Typologically Diverse Morphological Inflection.** In *Proceedings of the 17th SIGMORPHON Workshop on Computational Research in Phonetics, Phonology, and Morphology.*

SKILLS

Programming Languages	Python, Java, C, C++
Packages	Tensorflow, PyTorch, Pandas, Numpy, SciKit-Learn, SciPy
Parallel Computing	OpenMP and MPI with C
Languages	Good French (DELF B2, December 2016), Intermediate Japanese (JLPT N3, December 2018)
Other	LaTeX, Experience with Windows and multiple distributions of Linux

WORK EXPERIENCE

DSTL September 2016 - September 2019

Software Engineer

Worked within an Agile framework, to research and implement possible uses for machine learning and data science in defence using C++, Python, Java and Matlab. Acted as technical partner to industry offering guidance, monitoring deliverables and building relationships. Evaluated industry bids for funding for technical projects and made recommendations for funding decisions.

Google June 2014 - September 2014

Software Engineering Intern

Worked with the Text-to-Speech speech team on a 12 week project focusing on prosody of speech, using C++. Produced a prototype of an internal product for use in speech synthesis.

ACHIEVEMENTS

Awarded Kate Bertram Prize by Lucy Cavendish College for achieving a Pass with Distinction in MPhil Advanced Computer Science

Awarded DSTL Thank You Award for taking on additional work at short notice in order to help team meet a deadline (2018)

Awarded Prize for Outstanding Academic Achievement at Fort Pitt Grammar School (2012)