

## PhD Program in Computer Science and Mathematics



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Computation  
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11:00



Room Goedel  
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## Time-Based Models for Word Sense Disambiguation in Historical Texts

Word Sense Disambiguation (WSD) is a fundamental task in Natural Language Processing (NLP) that identifies the most appropriate meaning of a polysemous word based on its context. Although significant progress has been made in WSD techniques for modern languages, challenges remain for historical and low-resource languages. Incorporating temporal sensitivity into computational models can improve WSD accuracy on historical texts. In this talk, I will present my research on WSD algorithms tailored for historical corpora, including nineteenth-century English texts and Latin. By training historical language models on a nineteenth-century English corpus and using the Oxford English Dictionary and its Historical Thesaurus for evolving sense representations, I will show how time-sensitive approaches affect the models' performance. I will also explore the use of English-Latin aligned corpora for Latin WSD, comparing automated results with manually annotated data. This research makes a case for the potential of temporal WSD approaches to advance semantic analysis in historical texts.

*Barbara McGillivray is Lecturer in Digital Humanities and Cultural Computation in the Department of Digital Humanities of King's College London and Turing fellow at The Alan Turing Institute. She is Editor in Chief of the Journal of Open Humanities Data and convenor of the MA programme in Digital Humanities at King's, as well as convenor of the Turing special interest group "Humanities and data science". Her research focusses on computational methods for the study of language change in both historical languages and contemporary data. She has worked as a language technologist in the Dictionaries division of Oxford University Press and as a data scientist in the Open Research Group of Springer Nature. She has also been a Turing research fellow at the University of Cambridge and at The Alan Turing Institute and president of the ACL Special Interest Group on language technologies for the socio-economic sciences and humanities.*