# Nina Markl (she/her)

*sociolinguistics, speech technologies, AI ethics*

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## ▬▬ Education

**2019–2023 (awaiting viva)**
**PhD**, *UKRI CDT in Natural Language Processing*, THE UNIVERSITY OF EDINBURGH, Scotland
- **Supervisors:** Dr Catherine Lai, Prof Lauren Hall-Lew
- **Thesis:** "Language Variation, Automatic Speech Recognition, Algorithmic Bias"
- **Research interests:** risks and harms of sociotechnical systems; user experiences and perceptions of machine learning systems and automated decision making; design & evaluation of more equitable sociotechnical systems based on qualitative and quantitative data; interdisciplinary approaches to AI ethics
- **Completed courses:** Human-Computer Interaction, Use and evolution of digital data analysis and collection tools, Bayesian Statistics for Social Scientists, Controversies in the Data Society, Accelerated Natural Language Processing, Automatic Speech Recognition, Computer Programming for Speech and Language Processing, Introductory Applied Machine Learning, Special Topics in Sociolinguistics, Doing Research in NLP

**2015–2019**
**Linguistics MA (Hons) First Class Honours**, THE UNIVERSITY OF EDINBURGH, Edinburgh, Scotland
- Honours dissertation (awarded **Angus McIntosh Prize**): *A sociophonetic study of* FACE *and* GOAT *in Leith, Edinburgh.* (supervisor: Dr Josef Fruehwald)
- Courses on social anthropology, linguistic theory, phonetics, phonology, morphology, language variation & change, psycholinguistics & language acquisition and statistics

## ▬▬ Publications

[1] N. MARKL. ""I can't see myself ever living any[w]ere else": Variation in (HW) in Edinburgh English". In: *Language Variation and Change* (2023), pp. 1–27. DOI: 10.1017/S0954394523000078.

[2] T. REITMAIER, E. WALLINGTON, O. KLEJCH, N. MARKL, L.-M. LAM-YEE-MUI, J. PEARSON, M. JONES, P. BELL, and S. ROBINSON. "Situating Automatic Speech Recognition Development within Communities of Under-heard Language Speakers". In: *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. ACM, 2023. DOI: 10.1145/3544548.3581385.

[3] R. SANABRIA, N. BOGOYCHEV, N. MARKL, A. CARMANTINI, O. KLEJCH, and P. BELL. "The Edinburgh International Accents of English Corpus: Towards the Democratization of English ASR". In: *ICASSP 2023*. 2023.

[4] C. COWIE, L. HALL-LEW, Z. ELLIOTT, A. KLINGLER, N. MARKL, and S. J. MCNULTY. "Imagining the city in lockdown: Place in the COVID-19 self-recordings of the Lothian Diary Project". In: *Frontiers in Artificial Intelligence* 5 (2022). DOI: 10.3389/frai.2022.945643.

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[5]   L. Hall-Lew, C. Cowie, C. Lai, N. Markl, S. J. McNulty, S.-J. S. Liu, C. Llewellyn, B. Alex, Z. Elliott, and A. Klingler. "The Lothian Diary Project: Sociolinguistic Methods during the COVID-19 Lockdown". In: *Linguistics Vanguard* 8.s3 (2022), pp. 321–330. doi: `10.1515/lingvan-2021-0053`.

[6]   N. Markl. "(Commercial) Automatic Speech Recognition as a Tool in Sociolinguistic Research". In: *University of Pennsylvania Working Papers in Linguistics* 28.2 (2022). url: `https://repository.upenn.edu/pwpl/vol28/iss2/11`.

[7]   N. Markl. "Language Variation and Algorithmic Bias: Understanding Algorithmic Bias in British English Automatic Speech Recognition". In: *2022 ACM Conference on Fairness, Accountability, and Transparency*. FAccT '22. Seoul, Republic of Korea: Association for Computing Machinery, 2022, pp. 521–534. doi: `10.1145/3531146.3533117`.

[8]   N. Markl. "Mind the data gap(s): Investigating power in speech and language datasets". In: *Proceedings of the Second Workshop on Language Technology for Equality, Diversity and Inclusion*. Dublin, Ireland: Association for Computational Linguistics, 2022, pp. 1–12. doi: `10.18653/v1/2022.ltedi-1.1`.

[9]   N. Markl and S. J. McNulty. "Language technology practitioners as language managers: arbitrating data bias and predictive bias in ASR". In: *Proceedings of the Language Resources and Evaluation Conference*. Marseille, France: European Language Resources Association, 2022, pp. 6328–6339. url: `https://aclanthology.org/2022.lrec-1.680`.

[10]  L. Hall-Lew, C. Cowie, S. J. McNulty, N. Markl, S.-J. S. Liu, C. Lai, C. Llewellyn, B. Alex, N. Fang, Z. Elliott, and A. Klingler. "The Lothian Diary Project: Investigating the Impact of the COVID-19 Pandemic on Edinburgh and Lothian Residents". In: *Journal of Open Humanities Data* 7 (2021). doi: `10.5334/johd.25`.

[11]  N. Markl and C. Lai. "Context-sensitive evaluation of automatic speech recognition: considering user experience & language variation". In: *Proceedings of the First Workshop on Bridging Human–Computer Interaction and Natural Language Processing*. Online: Association for Computational Linguistics, 2021, pp. 34–40. url: `https://www.aclweb.org/anthology/2021.hcinlp-1.6`.

[12]  L. Burchell, J. Chi, T. Hosking, N. Markl, and B. Webber. "Querent Intent in Multi-Sentence Questions". In: *Proceedings of the 14th Linguistic Annotation Workshop*. Barcelona, Spain: Association for Computational Linguistics, 2020, pp. 138–147. url: `https://www.aclweb.org/anthology/2020.law-1.13`.

## Journal and Conference Reviewing

2022   **UK Language Variation and Change Conference**, June 2023, Edinburgh, *conference abstracts*

2022   **2nd Workshop on Bridging Human Computer Interaction and Natural Language Processing**, *North American Association for Computational Linguistics*, 15 July, Seattle, *conference papers*

2022   **2nd Workshop on Language Technology for Equality, Diversity and Inclusion**, *Association for Computational Linguistics*, 27 May, Dublin, *conference papers*

2021   **International Journal of Qualitative Methods**, *SAGE Journals*, *journal articles*

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## Employment (Research)

**since April 2023**   **Postdoctoral Research Assistant**, *UKRI Node in Trustworthy Autonomous Systems*, The University of Edinburgh

Principle Investigators: Prof. Subramanian Ramamoorthy, Prof Stuart Anderson, Prof Robin Williams

**2020-2022 (part-time)**   **Research Assistant**, *Lothian Diary Project*, University of Edinburgh

Data management; semi-automatic transcription (Kaldi); audio and video editing; data analysis and data visualisation; contribution to research outputs and public engagement events; typesetting and manuscript preparation; bibliography management

**May – July 2020**   **Research Assistant**, *Dr Andreas Steinhauer*, University of Edinburgh

Digitisation of historic Austrian birth records using optical character recognition software (Transkribus) and post-processing using R and Python

**2019**   **Research Assistant**, *Dr James McElvenny, Language Science Press*, Edinburgh

Typesetting Manuscripts in LaTeX

## Teaching Experience

**2022/23**   **Tutor**, *Professional Issues (Informatics)*, University of Edinburgh

3rd year undergraduate course introducing AI ethics and ethical issues in (computer) engineering; leading small group discussions, marking

**2022/23**   **Guest Lecturer & Marker**, *Sociolinguistics Research Design*, University of Edinburgh

Postgraduate course; guest lectures and workshop on: research & data ethics, writing research proposals, designing quantitative research projects, language & nationalism; marking

**2022/23**   **Guest Lecturer**, *Controversies in the Data Society*, University of Edinburgh

Postgraduate course on ethical issues in sociotechnical systems; guest lecture on risks and harms of Large Language Models

**2021/22**   **Marker**, *Sociolinguistics Research Design*, University of Edinburgh

Postgraduate course; marking

**2020-2021**   **Tutor**, *LEL2B: Phonetics and Empirical Methods*, University of Edinburgh

2nd year undergraduate course introducing phonetics and empirical methods; small group in-person tutoring and marking

**since 2020**   **Tutor**, *PPLS Skills Centre*, University of Edinburgh

Individual sessions with postgraduate and undergraduate students; Essay writing, quantitative data analysis and statistics support (coursework and dissertations)

## Prizes, Grants and Awards

**2022**   **Small grant**, *Institute of Language, Cognition and Computation*, University of Edinburgh

Award for work with collaborators to compile a diverse, multi-accent dataset of English language conversations for speech technology development (£5000)

**2022**   **AIES Student programme**, *AIES 2022*

Selected for participation in AIES student programme, fees covered by AIES

**2019-2023**   **PhD Funding**, *UKRI Centre for Doctoral Training in Natural Language Processing*, University of Edinburgh

Full scholarship covering tuition fees, programme costs and stipend

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2019 **Angus McIntosh Prize**, *Angus McIntosh Centre and School of Philosophy, Psychology and Language Sciences*, University of Edinburgh
Prize for best honours dissertation in Linguistics & English Language (£100)

## Invited seminar talks

11/2022 **Forensic Speech Science Research Group**, *University of York*

10/2022 **International Seminar Series**, *Swansea University*

10/2022 **Language Variation and Change Research Group**, *University of Edinburgh*

10/2022 **Centre of Speech Technology Research**, *University of Edinburgh*

11/2021 **Glasgow University Laboratory of Phonetics Lablunch**, *University of Glasgow*

10/2021 **Seminar series**, *University of Central Punjab*

10/2021 **Phonetics Research Group**, *Lancaster University*

09/2021 **Language in Context Seminar Series**, *University of Edinburgh*

## Conference talks & posters

08/2022 **AIES 2022**, *University of Oxford*

06/2022 **Language Resources and Evaluation Conference**, *online (Marseille, France)*

06/2022 **2022 ACM Conference on Fairness, Accountability and Transparency**, *online (Seoul, Republic of Korea)*

04/2022 **2nd Workshop on Language Technology for Equity, Diversity and Inclusion at ACL 2022**, *online (Dublin, Republic of Ireland)*

10/2021 **49th New Ways of Analyzing Variation (NWAV)**, *online (Austin, Texas, United States of America)*

09/2021 **13th UK Language Variation and Change (UKLVC)**, *online (Glasgow, United Kingdom)*

06/2021 **Linguistics and English Language Postgraduate Conference**, *online (Edinburgh, United Kingdom)*

09/2019 **12th UK Language Variation and Change (UKLVC)**, *London, United Kingdom*

04/2019 **9th Undergraduate Linguistics Association of Britain (ULAB)**, *London, United Kingdom*

04/2018 **8th Undergraduate Linguistics Association of Britain (ULAB)**, *Edinburgh, United Kingdom*

## Public Engagement

11/2022 **Close to Home: Lothian Diary Project**, *University of Edinburgh*
Public exhibition showcasing contributions to Lothian Diary project and Being Human Festival event at Streetreads Edinburgh

11/2021 **FOSS: Sharing Hidden Lockdown Stories**, *University of Edinburgh*
Virtual launch of report to Scottish parliament with policymakers and Lothian Diary Project contributors

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2020-2021 **Lothian Diaries events**, *University of Edinburgh*
Various recruitment and outreach activities to promote the Lothian Diary project, including participation in Being Human festival

## Other professional activities

2022 **Organising Committee**, UK Language Variation and Change 14

2020-2022 **Co-coordinator**, Sociolinguistics Reading Group, Edinburgh

2019–2021 **Organising Committee**, Language Lunch at Edinburgh

2019 **Organising Committee**, Edinburgh Symposium for Historical Phonology

2018–2019 **National Chair**, Undergraduate Linguistics Association of Britain
Britain's national organisation for undergraduate linguistics which provides a platform for undergraduate research at an annual conference

2017–2018 **Secretary**, Undergraduate Linguistics Association of Britain
Secretary of committee of undergraduate students organising 8th annual 3-day ULAB conference

2016–2019 **Coordinator & Volunteer**, FamiLing Peer Support
Peer support programme for undergraduate students in Linguistics and English Language (weekly revision sessions)

2019–2020 **Treasurer**, Edinburgh University Linguistics Society
Academic student society organising fortnightly academic talks for a broad audience and social events

2018–2019 **Talks Organiser**, Edinburgh University Linguistics Society

2016–2017 **Vice President**, Edinburgh University Linguistics Society

## Technical skills

**R, NVivo, Python, Excel**, *quantitative and qualitative data analysis, statistics, data processing*, experienced

**Qualtrics, R, NVivo**, *survey design, quantitative and qualitative analysis of survey responses*, experienced

**R, TEX, Adobe Illustrator**, *data visualisation, preparation of graphics for publications*, experienced

**Word, Powerpoint, LATEX, Canva**, *preparation of presentations and documents*, experienced

**Praat, ELAN**, *annotation, analysis, manipulation of audio files*, experienced

**Zotero, JabRef**, *reference management*, experienced

**Adobe Premiere Pro**, *video editing*, basic

**Bash, Matlab**, *basic*

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