

# Nikita Moghe

Researcher, Natural Language Processing

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## Summary

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- 7 years of research experience inclusive of professional experience at Microsoft (US, India), PolyAI (UK), and RBC-DSAI (India)
- Focus Areas: Task-oriented Conversational AI, Personalisation, Multilingual Dialogue Systems, Machine Translation Evaluation, Retrieval Augmented Generation, Representation Learning
- 11 publications in top tier NLP venues with recognition and awards
- An avid reader, traveller, fitness enthusiast, and instrumentalist (Keyboard, Sitar, and Ukulele)

## Skills

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- Generative AI inc. LLM
- Datasets and Evaluation
- Effective Communication
- Multilinguality, Machine Translation
- Conversational AI
- Stakeholder Management
- PyTorch, Huggingface, NumPy, SciPy, Git,  $\LaTeX$

## Education

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<b>University of Edinburgh</b> Ph.D., School of Informatics, <i>Awaiting Viva</i> Advisors: Alexandra Birch and Mark Steedman	2019 - Present
<b>Indian Institute of Technology Madras</b> M.S. (by Research), Computer Science and Engineering Advisors: Balaraman Ravindran and Mitesh M. Khapra	2016 - 2019 C.G.P.A: 8.8/10
<b>University of Mumbai</b> B.E., Computer Engineering	2012 - 2016 C.G.P.A: 9.53/10

## Honours

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- Outstanding Paper Award, ACL 2023
- Google PhD Fellowship 2022, Nomination, University of Edinburgh (one of three)
- AIML Apple Scholars 2022, Nomination, University of Edinburgh (one of three)
- Best Poster at RBC-DSAI Workshop May 2019
- Best Poster at Grace Hopper Celebration India 2018
- J.R.D. Tata Scholarship (Full Tuition Fee Waiver) 2013-14, 2014-15

## Professional Experience

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<b>Microsoft Semantic Machines</b> Research Intern	Summer 2023 Redmond, USA
<ul style="list-style-type: none"><li>○ Proposed incorporating user preferences through explicit standing instructions as an additional context to promote personalisation in LLMs.</li><li>○ Developed a language-to-program dataset NLSI exploring various scenarios where such instructions are applicable.</li><li>○ Benchmarked selection and interpretation methods raising new questions in retrieval, reasoning, and semantic parsing.</li></ul>	
<b>PolyAI</b> Machine Learning Intern	Summer 2021 London, UK
<ul style="list-style-type: none"><li>○ Improved intent detection to 86% accuracy by using conversational paraphrase detection as an intermediate task.</li><li>○ Worked on synthetic data generation for few-shot intent detection.</li><li>○ Conducted exploratory work on non-parametric few-shot multi-label intent detection.</li></ul>	

- Worked on the intersection of graph neural networks and knowledge-grounded dialogue systems.
- Developed a framework on incorporating semantic and structural information improving response generation by 7%.

**Microsoft Research**

Summer 2017

Intern, Workshop on Artificial Social Intelligence

Bengaluru, India

- Developed a minimalist conversation strategy to improve user engagement using insights from crowdsourced chats.
- Improved domain-specific conversations using information from knowledge graphs and case-based response generation.

## Selected Publications

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Complete list on [Google Scholar](#)

- **Machine Translation Meta Evaluation through Translation Accuracy Challenge Sets** [pdf]  
Nikita Moghe, Arnisa Fazla, Chantal Amrhein, Tom Kocmi, Mark Steedman, Alexandra Birch, Rico Sennrich, Liane Guillou  
Under Review, 2024
- **Interpreting User Requests in Context of Natural Language Standing Instructions** [pdf]  
Nikita Moghe, Patrick Xia, Ben Van Durme, Jason Eisner, Jacob Andreas, Harsh Jhamtani  
Under Review, 2023
- **Extrinsic Evaluation of Machine Translation Metrics** [pdf]  
Nikita Moghe, Tom Sherborne, Mark Steedman, Alexandra Birch  
In Proceedings of Association of Computational Linguistics, ACL 2023, **Outstanding Paper Award**
- **MULTI3NLU++: A Multilingual, Multi-Intent, Multi-Domain Dataset for NLU in Task-Oriented Dialogue**  
Nikita Moghe\*, Evgeniia Razumovskaia\*, Liane Guillou, Ivan Vulić, Anna Korhonen, Alexandra Birch [pdf]  
In Findings of Association of Computational Linguistics, ACL 2023
- **ACES: Translation Accuracy Challenge Sets for Evaluating Machine Translation Metrics** [pdf]  
Chantal Amrhein\*, Nikita Moghe\*, Liane Guillou\*  
In Proceedings of Seventh Conference on Machine Translation (WMT 2022), EMNLP 2022.
- **Cross-lingual Intermediate Finetuning improves Dialogue State Tracking** [pdf]  
Nikita Moghe, Mark Steedman, Alexandra Birch  
In Proceedings of 2021 Conference on Empirical Methods in Natural Language Processing, EMNLP 2021.
- **Towards Exploiting Background Knowledge for Building Conversation Systems** [pdf]  
Nikita Moghe, Siddhartha Arora, Suman Banerjee, Mitesh M. Khapra  
In Proceedings of 2018 Conference on Empirical Methods in Natural Language Processing, EMNLP 2018.

## Service

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**Organizer**

- Workshop on Graphs and more Complex structures for Learning and Reasoning (GCLR) at AAAI-21.  
Moderated the panel on *Learning and Reasoning with Complex graphs - a multi-disciplinary challenge*.
- CDTalks (2021-2022) - a monthly seminar series.

**Reviewer/Program Committee**

- AAAI, ACL, ACL Rolling Review, COLING, EAACL, EMNLP, NAACL
- Workshops: NILLI, CtrlGEN, NLP4ConvAI

**Talks**

- Taking Stock of Segment Level Evaluation in Machine Translation - NLPWithFriends, Unbabel-IST Seminars
- Intermediate Fine-tuning improves NLU for Dialogue Task - Alan Turing Institute, Huawei
- The Great Intent Detective - Aveni, PolyAI

**Public Engagement / Mentoring**

- Hrichika Nag - MInf Dissertation 2022-2023
- Widening NLP, EMNLP 2021 - Graduate School
- Women in STEM Mentorship, Informatics, 2021-2022
- I'm a Scientist Stay at Home - Coding Zone, Summer 2020