Nikita Moghe

Researcher, Natural Language Processing

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Summary

- 7 years of research experience with professional experience at Microsoft (USA and India), PolyAI (UK), and RBC-DSAI (India)
- Focus Areas: Task-oriented Conversational AI, Multilinguality, Personalisation, Representation Learning, Evaluation
- 10 first author publications in top tier NLP venues with recognition and awards
- An avid reader, traveller, fitness enthusiast, and instrumentalist (Keyboard, Sitar, and Ukulele)

Education

University of Edinburgh	**Edinburgh, UK**
Ph.D.in Computer Science	*Sept 2019 - Aug 2024*
Indian Institute of Technology Madras	**Chennai, India**
M.S. (by Research) in Computer Science and Engineering	*July 2016 - June 2019*
University of Mumbai	**Mumbai, India**
B.E. in Computer Engineering	*Aug 2012 - Jun 2016*

Skills

- Generative AI inc. LLM
- Multilinguality, Machine Translation
- Datasets and Evaluation
- Deep Learning
- Effective Communication
- Stakeholder Management

Tools: Python (8 years), PyTorch (3 years), Huggingface (2 years), NumPy (7 years), Git (5 years), LLM (2 years)

Professional Experience

Microsoft Semantic Machines	**Redmond, USA**
Research Intern, Hosts: Harsh Jhamtani, Jacob Andreas	*June 2023 - Sept 2023*

- Improving personalisation in LLMs by incorporating user preferences through explicit standing instructions.
- Developed a language-to-program dataset NLSI and benchmarked methods in retrieval, reasoning, and semantic parsing.
- **Artifacts:** [Paper] [Code]

PolyAI	**London, UK**
Machine Learning Intern, Hosts: Ben Levin, Ivan Vulić	*June 2021 - Sept 2021*

- Improved intent detection to 86% accuracy by using conversational paraphrase detection as an intermediate task.
- Worked on synthetic data generation for few-shot intent detection.
- Conducted exploratory work on non-parametric few-shot multi-label intent detection.

Robert Bosch Centre for Data Science and Artificial Intelligence	**Chennai, India**
Project Associate	*May 2018 - June 2019*

- 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%.
- **Artifacts:** [Paper] [Code]

Microsoft Research	**Summer 2017**
Intern, Workshop on Artificial Social Intelligence	*June 2017*

- 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.
- **Artifacts:** [Talk]

Publications/Talks

Peer-Reviewed Publications:

12. *Pitfalls and Outlooks in Using COMET*
    Vilém Zouhar*, Pinzhen Chen*, Tsz Kin Lam, **Nikita Moghe**, Barry Haddow
    WMT 2024 Research Track [Paper] [Code]

11. *Machine Translation Meta Evaluation through Translation Accuracy Challenge Sets*
    Nikita Moghe, Arnisa Fazla, Chantal Amrhein, Tom Kocmi, Mark Steedman, Alexandra Birch, Rico Sennrich, Liane Guillou
    Computational Linguistics, 2024 [Paper] [Code]

10. *Interpreting User Requests in Context of Natural Language Standing Instructions*
    Nikita Moghe, Patrick Xia, Jacob Andreas, Jason Eisner, Ben Van Durme, Harsh Jhamtani
    Findings of NAACL, 2024 [Paper] [Code]

9. *ACES: Translation Accuracy Challenge Sets at WMT 2023*
   Chantal Amrhein*, **Nikita Moghe***, Liane Guillou*
   WMT at EMNLP, 2023 [Paper] [Code]

8. *Extrinsic Evaluation of Machine Translation Metrics*
   Nikita Moghe, Tom Sherborne, Mark Steedman, Alexandra Birch **Outstanding Paper Award**
   ACL, 2023 **(Oral)** [Paper]

7. *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
   Findings of ACL, 2023; Poster at NLP4ConvAI, ACL 2023 [Paper] [Code]

6. *ACES: Translation Accuracy Challenge Sets for Evaluating Machine Translation Metrics*
   Chantal Amrhein*, **Nikita Moghe***, Liane Guillou*
   WMT at EMNLP, 2022; Poster at MT Marathon, 2022 [Paper] [Code]

5. *Cross-lingual Intermediate Finetuning improves Dialogue State Tracking*
   Nikita Moghe, Mark Steedman, Alexandra Birch
   EMNLP, 2021 **(Oral)**, [Paper] [Code]

4. *The University of Edinburgh-Uppsala University's Submission to the WMT 2020 Chat Translation Task*
   Nikita Moghe, Christian Hardmeier, Rachel Bawden
   WMT at EMNLP, 2020 [Paper]

3. *On Incorporating Structural Information to improve Dialogue Response Generation*
   Nikita Moghe, Priyesh Vijayan, Balaraman Ravindran, Mitesh M. Khapra
   NLP4ConvAI at ACL, 2020 **(Oral)**; Poster at EurNLP, 2019 [Paper] [Code]

2. *Towards Exploiting Background Knowledge for Building Conversation Systems*
   Nikita Moghe, Siddhartha Arora, Suman Banerjee, Mitesh M. Khapra
   EMNLP, 2018 **(Oral)** [Paper] [Code]

1. *A Dataset for Building Code-Mixed Goal Oriented Conversation Systems*
   Suman Banerjee, **Nikita Moghe**, Siddhartha Arora, Mitesh M. Khapra
   COLING, 2018 [Paper] [Code]

Invited Talks:
- *Taking Stock of Segment-Level Evaluation in Machine Translation* [NLPWithFriends, Unbabel-IST Seminars, Microsoft]
- *Intermediate Fine-tuning improves NLU for Dialogue Tasks* [Alan Turing Institute, Huawei]
- *The Great Intent Detective* [Aveni, PolyAI]

Honours

- 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

Service

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, EACL, EMNLP, NAACL
- Workshops: NILLI, CtrlGEN, NLP4ConvAI