Anastasia Kuznetsova

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Education

Indiana University — Bloomington, IN, USA
Ph.D. Candidate in Computer Science and Computational Linguistics (Dual major)
Thesis: "Data efficiency and model complexity reduction for speech processing systems."
Committee:
Minje Kim (Chair, Siebel School of Computing and Data Science, UIUC)
Francis Tyers (Chair, Department of Linguistics, Indiana University)
David Crandall (Member, Department of Computer Science, Indiana University)
Damir Cavar (Member, Department of Linguistics, Indiana University)
2019–Expected 2024

NRU Higher School of Economics — Moscow, Russia
M.A. in Computational Linguistics
Advisor: F.Tyers
2017–2019

Russian State University for the Humanities — Moscow, Russia
B.A. in Social Anthropology
2013–2017

Publications

Conference papers

[C5] **Anastasia Kuznetsova**, Aswin Sivaraman, Minje Kim, "The potential of Neural Speech Synthesis-based Data Augmentation for Personalized Speech Enhancement," Proc. 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2023, 1 – 5.

[C4] **Anastasia Kuznetsova**, Anurag Kumar, Jennifer Drexler-Fox and Francis Tyers, "Curriculum Optimization for Low-resource Speech Recognition," Proc. 2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2022, 8187 – 8191.

[C3] Piyush Vyas, **Anastasia Kuznetsova** and Donald S. Williamson, "Optimally Encoding Inductive Biases into the Transformer Improves End-to-End Speech Translation," Proc. Interspeech, 2021, 2287 – 2291. *Winner of 2021 Interspeech Best Student Paper Award.*

[C2] **Anastasia Kuznetsova** and Francis Tyers, "A finite-state morphological analyser for Paraguayan Guaraní," Proc. of the First Workshop on Natural Language Processing for Indigenous Languages of the Americas, 2021, 81 – 89.

[C1] Anna Zueva, **Anastasia Kuznetsova** and Francis Tyers, "A finite-state morphological analyser for evenki," Proc. of The 12th Language Resources and Evaluation Conference (LREC), 2020, 2581 – 2589.

Employment

Amazon.com Services LLC — Cambridge, MA, USA
Applied Scientist Intern
May 2024 – August 2024

– Foundational models for multi-channel audio

Indiana University Bloomington, IN, USA
Research Assistant August 2023 – Present

– Discretized Speech Representations for ASR model complexity reduction.

– Supervisor: Minje Kim

Google LLC Remote, IN, USA
Student Researcher September 2023 – December 2023

– Supervised clustering for speaker diarization.

Google LLC New York, NY, USA
Research Intern May 2023 – July 2023

– RL-based supervised clustering for speaker diarization.

Coqui.ai Remote, Willington, DE, USA
Research Intern, Text-to-Speech (TTS) June 2022 – August 2022

– Extraction of speaker attributes from SSL representations.

Indiana University Bloomington, IN, USA
Research Assistant August 2020 – May 2022

– SSL representation learning for mono-channel Speech Enhancement.

– Supervisor: Donald S. Williamson

Rev.com Remote, Austin, TX, USA
Machine Learning Engineer Intern (STT) June 2021 – August 2021

– Curriculum Learning for ASR data complexity optimization.

Indiana University Bloomington, IN, USA
Research Assistant August 2019 – May 2020

– Low-resource speech recognition.

– Supervisor: Francis Tyers

Teaching

Indiana University Bloomington, IN, USA
Assosiate Instructor Spring 2023

- ENGR-E 511 Machine Learning for Signal Processing

Indiana University Bloomington, IN, USA
Assosiate Instructor Fall 2022, Fall 2023

- ENGR-E 533 Deep Learning Systems

Awards

- *Luddy Outstanding Research Award* 2022
  Nominated as a graduate student for outstanding research by the Dept. of Computer Science, Luddy school of Informatics, Computing and Engineering, Indiana University.
- *Interspeech 2021 Best Student Paper Award* 2021

Miscellaneous activities

- The Potential of Neural Speech Synthesis-based Data Augmentation for Personalized Speech Enhancement, Poster presentation at Speech and Audio in the Northeast (SANE) workshop, October 26, 2023.

Skills

- **Expertise:** speech and audio models, foundational models
- **Coding:** Python, PyTorch, Tensorflow

Service

- **Reviewer:** ICASSP 2023, 2024, 2025
- **Mentor:** Google Summer of Code, Google Code-In 2018, 2019, 2020