Mert İnan

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Education

- **University of Pittsburgh** — Pittsburgh, PA
  Ph.D. in Computer Science (School of Computing and Information) — *2020 – present*
  - Advisor: Dr. Malihe Alikhani
  - Cumulative GPA: 3.6/4.00
  - Co-Organizer of PittNLPSeminar series. [website]
  - Co-Organizer of NSF Dialogue with Robots Workshop. [website]
- **Carnegie Mellon University** — Pittsburgh, PA
  M.Sc. in Computational Biology (School of Computer Science) — *2018 – 2020*
  - Awarded with Fulbright Master's Scholarship
  - Cumulative QPA: 3.91/4.00
  - Research Track, Advisor: Prof. Tai-Sing Lee
- **Bilkent University** — Ankara, Turkey
  B.Sc. in Computer Science — *2014 – 2018*
  - Cumulative GPA: 3.83/4.00
  - Graduated **second** in rank, with Summa Cum Laude. Top 1%.
- **École Polytechnique Fédérale de Lausanne (EPFL)** — Lausanne, Switzerland
  Exchange in Computer Science — *Jan 2017 – Sep 2017*
  - One year study and internship exchange. Granted research position in a neuroscience lab.
- **Relevant Courses**:
  Advanced NLP & Discourse Modeling, 10-701 Ph.D.-Level Machine Learning, 11-785 Deep Learning, Neural Computation, Advanced Systems Neuroscience, Biological Modelling & Simulation, Advanced Algorithms, Algorithms for Big Data, Theory of Computation, Computer Organization, Wide Area Networks, Foundations of Human-Computer Interaction

Publications

1) **Mert Inan**, Aishwarya Padmakumar, Spandana Gella, Patrick Lange, Dilek Hakkani-Tür. *"Multimodal Contextualized Plan Prediction for Embodied Task Completion"* EMNLP NILLI Workshop (2022).
2) **Mert Inan**, Malihe Alikhani. *"Grounding Novel Utterances in Visual Dialogue"* SemDial (2022). [PDF]
3) Malihe Alikhani, Thomas Kober, Bashar Alhafni, Yue Chen, **Mert Inan**, Elizabeth Nielsen, Shahab Raji, Mark Steedman, Matthew Stone. *"Zero-shot Cross-Linguistic Learning of Event Semantics"* INLG (2022). [PDF]
4) **Mert Inan***, Yang Zhong*, Sabit Hassan, Lorna Quandt, Malihe Alikhani. *"Learning cognitive and linguistic prosodic categories for automatic cross-lingual sign language understanding"* COGSCI (2022). [Abstract]
5) **Mert Inan***, Yang Zhong*, Sabit Hassan*, Lorna Quandt, Malihe Alikhani. *"Modeling Intensification for Sign Language Generation: A Computational Approach"* ACL Findings (2022). [PDF]
6) Carla Viegas, **Mert İnan**, Lorna Quandt, Malihe Alikhani. *"Including Facial Expressions in Contextual Embeddings for Sign Language Generation"* arXiv Preprint (2022). [PDF]

7) **Mert Inan**, Piyush Sharma, Baber Khalid, Radu Soricut, Matthew Stone and Malihe Alikhani. *"COSMic: A Coherence-Aware Generation Metric for Image Descriptions."* EMNLP (2021). [PDF]
8) Thomas A. W. Bolton, Younes Farouj, **Mert Inan**, Dimitri Van De Ville, *Structurally-Informed Deconvolution of Functional Magnetic Resonance Imaging Data.* IEEE ISBI (2019). [Abstract]
9) Thomas A. W. Bolton, **Mert Inan**, Dimitri Van De Ville, *Revealing directional cross-regional functional interplays with sparse coupled hidden Markov models.* OHBM (2019).

Research Experience

- **Multimodal Dialogue with Eye Gaze** — University of Pittsburgh
  Graduate Research Assistant, ***Dr. Malihe Alikhani*** — *Aug 2022 – present*
  - Collecting a dataset on human eye gaze for understanding the coherence between an image and its caption.
- **Multimodal Embodied Plan Prediction** — Amazon Alexa AI
  Applied Scientist Intern, — *May 2022 – Aug 2022*
  Aishwarya Padmakumar, Spandana Gella, Dilek Hakkani-Tur
  - Developing a multimodal plan prediction model with execution assistance for the TEAch Dataset.
- **Lexical Innovation in Multimodal Dialogue** — University of Pittsburgh
  Graduate Research Assistant, ***Dr. Malihe Alikhani*** — *January 2022 – May 2022*
  - Developing a multimodal dialogue system that is cognitive-aware with a focus on lexical innovation using the Photobook Dataset.
- **Sign Language Generation** — University of Pittsburgh
  Graduate Research Assistant, ***Dr. Malihe Alikhani*** — *May 2021 – present*
  - Led research on modeling intensification in sign language for generation using Transformers, with an interdisciplinary team of cognitive scientists, neuroscientists and American Sign Language users. Submitted papers to AAAI 2022 and ACL 2022.
- **Discourse-Aware Evaluation Metric for Image Captions** — University of Pittsburgh
  Graduate Research Assistant, ***Dr. Malihe Alikhani*** — *Aug 2020 – Sep 2021*
  - Primary contributor of research with Google AI, Rutgers University and University of Pittsburgh to develop an image caption generation metric that is coherence-aware.
- **Aspectuality in Image Captions for Turkish** — University of Pittsburgh
  Graduate Research Assistant, ***Dr. Malihe Alikhani*** — *Aug 2020 – present*
  - Annotated Turkish image captions in and analyzed the aspectuality and time aspect of captions compared to Wikipedia sentences.
- **Deep Learning in Visual Cortex** — Carnegie Mellon University
  Graduate Research Assistant, ***Prof. Tai-Sing Lee*** — *Dec 2018 – May 2020*
  - Modeled visual cortex V1 using Mean-Field Restricted Boltzmann Machines with sparse coding. Found the bug of high DC issue in the previous model. Supported by an NSF grant.
- **Human Functional MRI & Machine Learning** — EPFL & Campus Biotech
  Undergraduate Research Intern, ***Prof. Dimitri Van de Ville*** — *Aug 2017 – Sep 2017*
  - Improved and implemented Markov models to understand neural connections between different parts of the brain in fMRI scans.
- **Reaction-Diffusion on BioNetGen** — Carnegie Mellon University
  Graduate Research Assistant, ***Asst. Teach. Prof. Phillip Compeau*** — *May 2019 – Oct 2019*
  - Implemented a Gray-Scott reaction diffusion system and visualized it in 3D using BioNetGen and CellBlender. Created a teaching module explaining the steps.Supported by an NIH grant.

Academic Service & Teaching Experience

- **DialDoc 2021 Workshop** — ACL 2021
  Reviewer and Program Committee member. `[website]`
- **Special Track on AI for Social Impact** — AAAI 2022
  Reviewer. `[website]`
- **CogSci Main Program** — CogSci 2022
  Reviewer. `[website]`
- **ACL Rolling Review** — ARR 2022 Jan, Feb
  Reviewer & Emergency Reviewer. `[website]`
- **AAAI 2023** — AI for Social Impact
  Reviewer. `[website]`
- **Introduction to Data Science Course TA** — University of Pittsburgh
  Graduate Teaching Assistant, Computer Science Department — *Sep 2022 – present*
- **Theory of Computation Course TA** — University of Pittsburgh
  Graduate Teaching Assistant, Computer Science Department — *Jan 2022 – May 2022*
- **Algorithms and Data Structures 2 Course TA** — University of Pittsburgh
  Graduate Teaching Assistant, Computer Science Department — *Jan 2022 – May 2022*
- **Formal Methods in Computer Science Course TA** — University of Pittsburgh
  Graduate Teaching Assistant, Computer Science Department — *Sep 2020 – Dec 2021*
- **Computational Perception Course TA** — Carnegie Mellon University
  Graduate Teaching Assistant, Computer Science Department — *Aug 2019 – Dec 2019*

Awards, Grants & Honours

Amazon Alexa Prize TaskBot Challenge 2 ($250 000) 2023
Assistantship (University of Pittsburgh) ($20 000) . . . . . 2020 – 2022
Fulbright Master's Grant (U.S. Department of State) ($100 000) . . . . . 2018 – 2020
Merit Fellowship (Carnegie Mellon University) ($9 000) . . . . . 2018 – 2020
Summa Cum Laude (Bilkent University) 2018
Merit Scholarship (Bilkent University) (₺70 000) . . . . . 2015 – 2016
High Honor Student (Bilkent University) . . . . . 2014 – 2018

Skills, Toolkits & Languages

- **Computational Toolkit:** PyTorch, HuggingFace, TensorFlow, NLTK, Keras, Hugging Face, Rasa, Python, MATLAB, C, C++, Java, Go, Bash, Linux, SLURM, tmux, vim, CUDA, Blender, CellBlender, mcell, BioNetGen, HTML/XML, SQL, JavaScript
- **Human Languages:** Türkçe, English, Français, 日本語, 中文, ქართული