Gaoussou Youssouf Kebe

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Research Interests

AI for Mental Health, Individual and Situational Context in Human-Human and Human-Agent Interactions, Personalization, Multimodal Machine Learning, Speech Processing, Natural Language Understanding, Co-speech Gesture Understanding.

Education

Carnegie Mellon University   Expected: May 2027
Ph.D. in Computer Science
Language Technologies Institute, School of Computer Science
Pittsburgh, PA
Relevant Courses:

- Advanced Natural Language Processing (11711),
- Human Language in AI (11-724),
- Multimodal Machine Learning (11777),
- Artificial Social Intelligence (11-866),
- Advanced Topics In Multimodal Machine Learning (11-877)

University of Maryland, Baltimore County   May 2022
M.S. in Computer Science
Baltimore, MD

Bursa Technical University   June 2018
B.S. in Computer Engineering
Bursa, Turkey

PhD Research Projects

- **Gesture and Speech Synthesis:** Collecting multimodal dataset for contextualized gesture synthesis to understand co-speech gesture production. [Paper Link]
- **Mental Health Analysis:** Leveraging LLMs for automatic depression assessment through the MADRS scale. [Paper Link]
- **Speaker Diarization Enhancement:** Leveraging LLMs and visual cues for enhanced speaker diarization in multimodal settings.
- **Social Captioning Project:** Evaluating VLMs for video-to-text captioning and question answering in social interaction videos.
- **Meta-funded VR Project:** Developing a pilot multimodal dataset of user interactions in VR settings with social agents to explore interaction dynamics, contributing a deliverable aimed at improving user experience in VR environments.

Publications

LlaMADRS: Prompting Large Language Models for Interview-Based Depression Assessment.
Gaoussou Youssouf Kebe, Jeffrey M. Girard, Einat Liebenthal, Justin Baker, Fernando

De la Torre, Louis-Philippe Morency, Under review at the 63rd Annual Meeting of the Association for Computational Linguistics (**Under Review at ACL 2025**)

GeSTICS: A Multimodal Corpus for Studying Gesture Synthesis in Two-party Interactions with Contextualized Speech. **Gaoussou Youssouf Kebe**, Mehmet Deniz Birlikci, Auriane Boudin, Ryo Ishii, Jeffrey M. Girard and Louis-Philippe Morency, In the 24th ACM International Conference on Intelligent Virtual Agents (**IVA 2024**), Glasgow, UK

Social-IQ 2.0 Challenge: Benchmarking Multimodal Social Understanding. Alex Wilf, Leena Mathur, Sheryl Mathew, Claire Ko, Gaoussou Youssouf Kebe, Paul Pu Liang, Louis-Philippe Morency, 2023

Bridging the Gap: Using Deep Acoustic Representations to Learn Grounded Language from Percepts and Raw Speech. **Gaoussou Youssouf Kebe**, Luke E. Richards, Edward Raff, Francis Ferraro, Cynthia Matuszek, In the 2022 AAAI Conference on Artificial Intelligence (**AAAI 2022**), Vancouver, BC, Canada, February 2022 **[15% acceptance rate]**

A Spoken Language Dataset of Descriptions for Speech-Based Grounded Language Learning. **Gaoussou Youssouf Kebe**, Padraig Higgins, Patrick Jenkins, Kasra Darvish, Rishabh Sachdeva, Ryan Barron, John Winder, Donald Engel, Edward Raff, Francis Ferraro, Cynthia Matuszek, In the 35th Conference on Neural Information Processing Systems (**NeurIPS 2021**) Datasets and Benchmarks Track, December 2021

Practical Cross-modal Manifold Alignment for Robotic Grounded Language Learning. Andre T Nguyen, Luke Richards, **Gaoussou Youssouf Kebe**, Edward Raff, Kasra Darvish, Francis Ferraro, Cynthia Matuszek, In the 4th Multimodal Learning and Applications Workshop (MULA) at the Conference on Computer Vision and Pattern Recognition (**CVPR 2021**), June 2021

Towards Making Virtual Human-Robot Interaction a Reality. Padraig Higgins, **Gaoussou Youssouf Kebe**, Adam Berlier, Kasra Darvish, Don Engel, Cynthia Matuszek, Francis Ferraro, In the 3rd International Workshop on Virtual, Augmented, and Mixed-Reality for Human-Robot Interactions (VAM-HRI 2021), March 2021

BERT vs. XLNet in Multilabel Text Classification. **Gaoussou Youssouf Kebe**, Cynthia Matuszek, Francis Ferraro, In the 8th Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL 2020), College Park, Maryland, USA, March 2020

A Novel Shortest Path Routing Algorithm for Wireless Data Collection in Transportation Networks. Izzet Fatih Senturk, **Gaoussou Youssouf Kebe**, In the 4th International Conference on Computer Science and Engineering (UBMK 2019), Samsun, Turkey, September 2019

A New Approach to Simulating Node Deployment for Smart City Applications Using Geospatial Data. Izzet Fatih Senturk, **Gaoussou Youssouf Kebe**, In the 6th International Symposium on Networks, Computers and Communications (ISNCC 2019), Istanbul, Turkey, June 2019

Experience

Ph.D. Student, Carnegie Mellon University   Aug. 2022 - Present
- Pittsburgh, PA
- Language Technologies Institute, School of Computer Science
- Advisor: Louis-Philippe Morency

- Research: Modeling individual differences in social interactions across visual, verbal, and vocal modes

Research Intern, Honda Research Institute   May 23, 2022 - Aug. 19, 2022
- Vision and Language Navigation Internship

Research Assistant, University of Maryland, Baltimore County   Jan. 2020 - May 2022
- Baltimore, MD
- The Interactive Robotics and Language (IRAL) Lab
- Worked with: Cynthia Matuszek, Francis Ferraro
- Worked on: Grounded Language Acquisition, Event-centric NLP

Teaching Assistant, University of Maryland, Baltimore County   Aug. 2019 - Dec. 2019
- Baltimore, MD
- Computer Architecture

Research Assistant, Bursa Technical University   June 2018 - June 2019
- Bursa, Turkey
- Robot and Sensor Networks Lab (Rosenet) Lab
- Worked with: Izzet Fatih Senturk
- Worked on: Wireless Sensor Networks

Web Developer, DRM Bilişim   Oct. 2017 - June 2019
- Bursa, Turkey
- Participated in the development of a CRM system
- Implemented a web-socket based chat server
- Designed and developed multiple websites with diverse functionalities

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Community Service and Departmental Activities

- **LTI Diversity, Equity, and Inclusion (DEI) Committee:** Active member contributing to initiatives aimed at creating a more inclusive academic environment.
- **Mentoring Undergraduates:** Mentored three underrepresented undergraduate students, meeting biweekly to discuss topics related to AI and graduate studies, helping mentees connect with research opportunities.

Awards & Honors

- Inclusion@RSS 2020 Fellow
- NRI 2020 PI Meeting Student Scholarship
- Top student of the BTU Computer Engineering 2018 class
- Bursa Technical University Success Scholarship
- Merit-Based Bursa Technical University Full Tuition Waiver
- TAPIA 2021 Attendee
- ACL Year-Round Mentee 2021
- Panelist at Inclusion@RSS 2021

Languages

French (Native), English (Fluent), Turkish (Intermediary)