

Tanvi Dinkar

Employment

- 2022-24 School of Mathematical and Computer Sciences, Heriot-Watt University, Scotland
Research Associate
2022-2024: EPSRC project: *AISEC: AI Secure and Explainable by Construction*
2023-2024: EPSRC project: *Gender Bias in Conversational AI*
2024-Current: EPSRC project: *Equally Safe Online*
PI: Ioannis Konstas, Co-PI: Gavin Abercrombie
- 2018-22 Institut Polytechnique de Paris, Paris
Marie Curie Early Stage Researcher (ESR) for ANIMATAS European Training Network
Principal Investigator: Mohamed Chetouani
- 2016-18 Nuance Communications, Germany (now Microsoft)
Language Engineer
Tasks: Implementation of dialogue flows in the ASR-NLU system, analysis of tickets, bug fixing, platform testing, localisation and complex pre-processing for low resource languages.
- 2013-14 PES University, Bangalore
Research Assistant
Tasks: Linguistic input for accented English ASR project funded by General Electronics (GE) research.

Education

- 2018-22 Institut Polytechnique de Paris
PhD Computer Science
Thesis: *Computational Models of Disfluencies: Fillers and Discourse Markers in Spoken Language Understanding*.
Supervisor: Chloé Clavel; co-supervisor: Catherine Pelachaud, Ioana Vasilescu
- 2014-15 University of Edinburgh
MSc Speech and Language Processing
Masters thesis: *Implementation of a voice activity detection algorithm*.
Supervisor: Simon King
- 2012-13 University of Edinburgh
MSc Linguistics and English Language
Masters thesis: *The use of the labiodental approximate in Indian English*.
Supervisor: Claire Cowie
- 2008-11 Christ University
BA English (Hons.)

Research visits

2021 Institut des Systèmes Intelligents et de Robotique, Sorbonne, Paris. Three months.

Teaching and Supervision

Heriot-Watt University

Teaching:

2023, 2024 F21CA Conversational Agents
2022, 2023 F20PA Research Methods and Requirements Engineering

2022-present PhD supervision assistance: Marco Casadio, Nicolas Vitsakis

MSc supervision:

2024-25 F21MP Masters Project and Dissertation
Raj Makwana

2023-24 F21MP Masters Project and Dissertation
Sachin Sashidharan Nair, paper presented at *HumEval 2024 @ LREC-COLING*

2023 F21CA Conversational Agents, 2 student group projects
Both groups had subsequent publications in *SIGDial 2023*, and *ROMAN 2023* respectively

2024 F21CA Conversational Agents, 2 student group projects
One group presented their publication at *CONNECT @ the 24TH ACM International Conference - IVA 2024*

Institut Polytechnique

2020-21 Teaching Assistant:
MSc, Machine learning for Natural Language Processing
BSc supervision:
2019-20 PACT (Projet d'Apprentissage Collaboratif Thématique)

Funding and awards

2023 Scottish Informatics & Computer Science Alliance funding for small projects £1,000
2024 (Applied, to be collaborator) Foundation Cariplo young researchers grant

Publications

Conferences and Journals

Jiang, A., Vitsakis, N., **Dinkar, T.**, Abercrombie, G., & Konstas, I. (2024). Re-examining Sexism and Misogyny Classification with Annotator Attitudes. (*Accepted to EMNLP 2024*).

Casadio, M., **Dinkar, T.**, Komendantskaya, E., Arnaboldi, L., Isac, O., Daggitt, M. L., ... & Lemon, O. (2024). NLP Verification: Towards a General Methodology for Certifying Robustness. *arXiv preprint arXiv:2403.10144*.

Dinkar, T., Clavel, C., & Vasilescu, I. (2023). Fillers in spoken language understanding: Computational and psycholinguistic perspectives. *Traitement Automatique des Langues (TAL)*, Volume 63-3 (2023)

(*Selected as one of the top 3 journal publications to be presented at Sigdial 2023*) Norman, U.*, **Dinkar, T.***, Bruno, B., & Clavel, C. (2022). Studying Alignment in a Collaborative Learning Activity via Automatic Methods: The Link Between What We Say and Do. *Dialogue & Discourse*, 13(2), 1-48.

(*Nominated for best paper award EMNLP*) Abercrombie, G.*, Curry, A. C.*, **Dinkar, T.***, Rieser, V., & Talat, Z. (2023, December). Mirages. On Anthropomorphism in Dialogue Systems. In *Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing* (pp. 4776-4790).

Cherakara, N., Varghese, F., Shabana, S., Nelson, N., Karukayil, A., Kulothungan, R., Afil Farhan, M., Nesses, B., Moujahid, M., **Dinkar, T.**, Rieser, V., Lemon, O. (2023) FurChat: An Embodied Conversational Agent using LLMs, Combining Open and Closed-Domain Dialogue with Facial Expressions. In *Proceedings of the 24th Annual SIGdial Meeting on Discourse and Dialogue*.

Dinkar, T., Colombo, P., Labeau, M., & Clavel, C. (2020). The Importance of Fillers for Text Representations of Speech Transcripts. In *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP)* (pp. 7985-7993).

Dinkar, T., Vasilescu, I., Pelachaud, C., & Clavel, C. (2020). How confident are you? exploring the role of fillers in the automatic prediction of a speaker's confidence. In *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)* (pp. 8104-8108). IEEE. Paper.

Dinkar, T., Biancardi, B., & Clavel, C. (2021). From local hesitations to global impressions of a speaker's feeling of knowing. In *Proceedings of the 25th Workshop on the Semantics and Pragmatics of Dialogue (SemDial)*.

Dinkar, T., Vasilescu, I., Pelachaud, C., & Clavel, C. (2018). Disfluencies and teaching strategies in social interactions between a pedagogical agent and a student: Background and challenges. In SEMDIAL 2018 (AixDial), *The 22nd workshop on the Semantics and Pragmatics of Dialogue* (pp. 188-191). Laurent Prévot, Magalie Ochs and Benoît Favre. Paper.

Workshops

Chen, D. , Chen, Z., Hayes, A., Jurcaga, L., Karde, P., Zhou, Y., **Dinkar, T.**, Abercrombie G.

Comparing Automatic metrics with Human Perceptions: the Ethical Challenges of Evaluating the Human-likeness of Chatbots (2024). *CONNECT @ 24TH ACM INTERNATIONAL CONFERENCE ON INTELLIGENT VIRTUAL AGENTS (IVA)*.

Nair, S., **Dinkar, T.**, Abercrombie G. Exploring Reproducibility of Human-Labelled Data for Code-Mixed Sentiment Analysis. *HumEval 2024 at LREC-COLING*.

Dinkar, T., Abercrombie G., Rieser V. DExpert Evaluation? Reproducing Human Judgements of the Fluency of Generated Text (2024). *HumEval 2024 at LREC-COLING*.

Dinkar, T. Safety in Conversational AI. (2023). *19th Workshop on Young Researchers Roundtable in Spoken Dialogue Systems*.

Casadio, M., Arnaboldi, L., Daggitt, M. L., Isac, O., **Dinkar, T.**, Kienitz, D., ... & Komendantskaya, E. (2023). ANTONIO: Towards a Systematic Method of Generating NLP Benchmarks for Verification. *FOMLAS 2023: 6th Workshop on Formal Methods for ML-Enabled Autonomous Systems Affiliated with CAV 2023*.

Wilson, B., Schlosser, Y., Tarkany, R., Moujahid, M. Nettet, B., **Dinkar, T.**, Rieser, V. FurNav: Development and Preliminary Study of a Robot Direction Giver. To appear in 32nd *IEEE International Conference on Robot and Human Interactive Communication (RO-MAN 2023)*, Aug 28 - Aug 31, 2023, Late Breaking Reports.

Belz, A., Thomson, C., Reiter, E., Abercrombie, G., Alonso-Moral, J. M., Arvan, M., ... & **Dinkar, T.** ... & Yang, D. (2023). Missing information, unresponsive authors, experimental flaws: The impossibility of assessing the reproducibility of previous human evaluations in NLP. In *The Fourth Workshop on Insights from Negative Results in NLP* (pp. 1-10).

Vitsakis, N., Parekh, A., **Dinkar, T.**, Abercrombie, G., Konstas, I., & Rieser, V. (2023). iLab at SemEval-2023 Task 11 Le-Wi-Di: Modelling Disagreement or Modelling Perspectives?. In *Proceedings of the 17th International Workshop on Semantic Evaluation (SemEval-2023)*, pages 1660–1669, Toronto, Canada. Association for Computational Linguistics.

Dinkar, T. Influence of spontaneous speech on the safety and robustness of SOTA models. (2022). *18th Workshop on Young Researchers Roundtable in Spoken Dialogue Systems*.

Biancardi, B., Ceccaldi, E., Clavel, C., Chollet, M., & **Dinkar, T.** (2021). CATS2021: International Workshop on Corpora And Tools for Social skills annotation. In *Proceedings of the 2021 International Conference on Multimodal Interaction* (pp. 857-859).

Dinkar, T. Representations of fillers and discourse markers in SLU: a psycholinguistic approach. (2021). *17th Workshop on Young Researchers Roundtable in Spoken Dialogue Systems*.

Invited talks

2024 **Department of Informatics, University of Edinburgh, Scotland**

2024 **Department of Computer Science, University of Aberdeen, Scotland**

2023 Department of Information Engineering and Science, University of Trento, Italy
 2023 Milan Natural Language Processing Group, Bocconi University, Milan
 2022 Cognitive Machine Learning Group, ENS, Paris
 2021 Talking Robotics

Academic service & activities

Organising Committee member :

Safety in Conversational AI workshop (at LREC-COLING) 2024
 Young Researchers Roundtable on Spoken Dialogue Systems at SIGDial 2023
 Special Interest Group on Discourse and Dialogue (SIGDial 2022)
 International Workshop on Corpora And Tools for Social skills annotation at ICMI 2021
 Human-Machine Interaction: Perception, Social Learning, Personalised Adaptation in Educational Settings (Online Workshop) 2021
 Industry-driven workshop: Building industry-guided showcases of the ANIMATAS research (Online Workshop) 2021

Programme Committee member:

Association for Computational Linguistics Rolling Review (ARR)
 ACM International Conference on Multimodal Interaction (ACM ICMI) 2024, 2023
 International Conference on Affective Computing and Intelligent Interaction (ACII) 2024, 2023, 2022, 2021
 Conversational User Interfaces (CUI) 2022
 ACM/IEEE International Conference on Human-Robot Interaction (HRI) 2022
 Empirical methods in Natural Language Processing (EMNLP) 2021, 2019
 viRtual agEnTs Against disCriminaTion (REACT) at IVA 2024
 HumEval 2024, 2023
 Computational Modeling of People's Opinions, Personality and Emotions in Social Media (PEOPLES) 2020
 Conference of the International Speech Communication Association (Interspeech) 2019

Journal reviewer:

Frontiers in Robotics and AI

Outreach and science communication

2024	British Academy Summer Showcase	<i>Voice Clones</i> . Panel
2023	NIST generative AI	<i>Working group</i> . An initiative to gather public input to create an AI Risk Management Framework
2023	Scottish AI Summit	<i>The human side of conversational AI</i> . Panel.
2021	Introducing Language Sciences at UoE	<i>Engage India</i> . Outreach — invited to share my experience to prospective students from India
2021	Prospective students, UoE	PPLS and Informatics department. Outreach — invited to share my experience to prospective students.

Press & media

Mirages of Humanity: The Problem with Conversational AI. *InterMedia* Vol 1 Issue 4. December 2023.

An embodied conversational agent that merges large language models and domain-specific assistance. *TechXplore*. September 2023.

Researchers create generative AI robot assistant. *Inquirer.net*. September 2023

Robots teaching Assistants. *I'M Tech*. September 2018

Additional skills

IT/Technology: Python (including SOTA ML and NLP libraries, such as Pytorch, HuggingFace, Spacy . . .), XML, R, PRAAT scripting, batch scripting and HTML (particularly for purposes of crowd-sourcing annotations).

Linguistics: Transcription campaigns, data collection and annotation (e.g. experience with MTurk and Prolific, writing annotation guidelines for annotators, putting together annotation campaigns), phonetic analysis, grammars (e.g BNF) and dictionaries