

# Ece TAKMAZ

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WEBSITE: <http://ecekt.github.io>

GOOGLE SCHOLAR: <https://scholar.google.nl/citations?user=CX4qrKkAAAAJ>

## RESEARCH INTERESTS

Natural Language Processing, Multimodal NLP, Cognitive Modelling, Natural Language Generation, Image Captioning, Multimodal Dialogue, Vision and Language, Eye-Tracking, Perception and Action

## BACKGROUND

<b>Utrecht University, Institute for Language Sciences</b> Postdoctoral Researcher in the Language, Logic and Information division	2025 - Now
<b>Utrecht University, Department of Information and Computing Sciences</b> Postdoctoral Researcher in the NLP Group	2024 - 2024
<b>University of Amsterdam, Institute for Logic, Language and Computation</b> PhD Candidate in the Dialogue Modelling Group	2019 - 2023
Thesis: 'Visual and Linguistic Processes in Deep Neural Networks: A Cognitive Perspective'	
<b>University of Amsterdam</b> M.Sc. in Artificial Intelligence	2017 - 2019
Thesis: 'Caption the Gaze: Enhancing Neural Image Captioning with Eye-Tracking' CGPA: 8.6/10.0 Honours	
<b>Middle East Technical University</b> , Ankara, Turkey M.Sc. in Cognitive Science	2012 - 2015
CGPA: 3.95/4.00	
<b>Bilkent University</b> , Ankara, Turkey B.Sc. in Computer Engineering	2008 - 2012
CGPA: 3.21/4.00 Honor	

## ADDITIONAL EDUCATION

<b>Laboratoire d'Informatique de Grenoble and Naver Labs Europe</b> Advanced Language Processing Winter School	2022
<b>Middle East Technical University</b> , Ankara, Turkey Ph.D. student in Cognitive Science CGPA: 4.00, discontinued to move abroad	2015 - 2017
<b>University of Amsterdam</b> , Amsterdam, The Netherlands Summer School on Computational Modelling & Cognitive Development	2016

## OTHER WORK AND RESEARCH EXPERIENCE

<b>University of Copenhagen</b> , Copenhagen, Denmark Visited Assist. Prof. Nora Hollenstein - <i>Center for Language Technology</i>	Apr-May 2022
<b>University of Amsterdam</b> , Amsterdam, The Netherlands Honours programme research - <i>Dialogue Modelling Group</i> Language-and-vision models, multimodal datasets and multimodal representations	2018 - 2019
<b>Aalto University</b> , Espoo, Finland Visiting Doctoral Student - <i>User Interfaces Group</i>	May-Aug 2017
<b>Middle East Technical University</b> , Ankara, Turkey Teaching and Research Assistant at the <i>Department of Cognitive Science</i> Automated planning and affordances, eye-tracking, tool-making and problem-solving	2013 - 2017

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<b>ISCTE - University Institute of Lisbon</b> , Lisbon, Portugal	Jan-Feb 2016
Early Stage Research Fellow - <i>Eye-tracking, multimodal interaction, silent speech</i>	+
IRIS:Towards Natural Interaction and Communication	Feb-Mar 2017
Project funded by the European Commission under the FP7 Marie Curie action.	

<b>Microsoft Language Development Center</b> , Lisbon, Portugal	Jul-Aug 2015
Early Stage Research Fellow	+
IRIS:Towards Natural Interaction and Communication	Jan-Feb 2015

Summer Intern at <b>ASELSAN</b> , Ankara, Turkey	Jun-Jul 2011
Summer Intern at <b>AYESAS</b> , Ankara, Turkey	Jun-Jul 2010

## PUBLICATIONS

**Ece Takmaz**, Lisa Bylinina, Jakub Dotlaci. Model Merging to Maintain Language-Only Performance in Developmentally Plausible Multimodal Models. Accepted to EMNLP 2025 Workshop BabyLM. [\[LINK\]](#)

**Ece Takmaz**, Albert Gatt, Jakub Dotlaci. Traces of Image Memorability in Vision Encoders: Activations, Attention Distributions and Autoencoder Losses. Accepted to the ICCV 2025 workshop MemVis: The 1st Workshop on Memory and Vision. [\[LINK\]](#)

Filippo Merlo, **Ece Takmaz**, Wenkai Chen, Albert Gatt. COOCO - Common Objects Out-of-Context - Semantic Violation in Scenes: Investigating Multimodal Context in Referential Communication. Preprint, 2025. [\[LINK\]](#)

**Ece Takmaz**. Visual and Linguistic Processes in Deep Neural Networks: A Cognitive Perspective. **PhD Thesis**. Universiteit van Amsterdam, 2024. [\[LINK\]](#)

Anna Bavaresco, Raffaella Bernardi, Leonardo Bertolazzi, Desmond Elliott, Raquel Fernández, Albert Gatt, Esam Ghaleb, Mario Julianelli, Michael Hanna, Alexander Koller, André F. T. Martins, Philipp Mondorf, Vera Neplenbroek, Sandro Pezzelle, Barbara Plank, David Schlangen, Alessandro Suglia, Aditya K Surikuchi, **Ece Takmaz**, Alberto Testoni. LLMs instead of Human Judges? A Large Scale Empirical Study across 20 NLP Evaluation Tasks. In Proceedings of ACL 2025. [\[LINK\]](#)

Hanna-Sophia Widhoelzl, **Ece Takmaz**. Decoding Emotions in Abstract Art: Cognitive Plausibility of CLIP in Recognizing Color-Emotion Associations. In Proceedings of the Annual Meeting of the Cognitive Science Society 2024. [\[LINK\]](#)

**Ece Takmaz**, Sandro Pezzelle, and Raquel Fernández. Describing Images *Fast and Slow*: Quantifying and Predicting the Variation in Human Signals during Visuo-Linguistic Processes. In Proceedings of EACL 2024. [\[LINK\]](#)

**Ece Takmaz**\*, Nicolo' Brandizzi\*, Mario Julianelli, Sandro Pezzelle, and Raquel Fernández. Speaking the Language of Your Listener: Audience-Aware Adaptation via Plug-and-Play Theory of Mind. In Findings of ACL 2023. [\[LINK\]](#) (\* Shared first authorship)

**Ece Takmaz**. Team DMG at CMCL 2022 Shared Task: Transformer Adapters for the Multi- and Cross-Lingual Prediction of Human Reading Behavior. In Proceedings of the ACL 2022 Workshop on Cognitive Modeling and Computational Linguistics (CMCL). [\[LINK\]](#) \*Best Shared Task Paper Award\*

**Ece Takmaz**, Sandro Pezzelle, and Raquel Fernández. Less Descriptive yet Discriminative: Quantifying the Properties of Multimodal Referring Utterances via CLIP. In Proceedings of the ACL 2022 Workshop on Cognitive Modeling and Computational Linguistics (CMCL). [\[LINK\]](#)

Sandro Pezzelle, **Ece Takmaz** and Raquel Fernández. Word Representation Learning in Multimodal Pre-Trained Transformers: An Intrinsic Evaluation. In TACL 2021. [\[LINK\]](#)

Gökhan Gönül, **Ece Takmaz** and Annette Hohenberger. Preschool children's use of perceptual-motor knowledge and hierarchical representational skills for tool making. *Acta Psychologica*, 220, 103415, October 2021. [\[LINK\]](#)

**Ece Takmaz**, Sandro Pezzelle, Lisa Beinborn and Raquel Fernández. Generating Image Descriptions via Sequential Cross-Modal Alignment Guided by Human Gaze. In Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP 2020). [\[LINK\]](#)

**Ece Takmaz**, Mario Julianelli, Sandro Pezzelle, Arabella Sinclair and Raquel Fernández. Refer, Reuse, Reduce: Grounding Subsequent References in Visual and Conversational Contexts. In Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP 2020). [\[LINK\]](#)

Janosch Haber, Tim Baumgärtner, **Ece Takmaz**, Lieke Gelderloos, Elia Bruni, and Raquel Fernández. The PhotoBook Dataset: Building Common Ground through Visually Grounded Dialogue. In Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (ACL), 2019. [\[LINK\]](#)

Ravi Shekhar, **Ece Takmaz**, Raquel Fernández, and Raffaella Bernardi. Evaluating the Representational Hub of Language and Vision Models. In Proceedings of the 13th International Conference on Computational Semantics (IWCS), 2019. [\[LINK\]](#)

Gökhan Gönül, **Ece Kamer Takmaz**, Annette Hohenberger, and Michael Corballis. The cognitive ontogeny of tool making in children: The role of inhibition and hierarchical structuring. *Journal of Experimental Child Psychology*, Volume 173, 222-238, May 2018. [\[LINK\]](#)

## POSTER PRESENTATIONS

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JUN 2025	Merlo, F., Takmaz, E., Chen, W., Gatt, A. COOCO - Common Objects Out-of-Context - Semantic Violation in Scenes: Investigating Multimodal Context in Referential Communication. NLG in the Lowlands. <a href="#">[LINK]</a>
MAR 2024	Takmaz, E., Pezzelle, S. and Fernández, R. Describing Images <i>Fast and Slow</i> : Quantifying and Predicting the Variation in Human Signals during Visuo-Linguistic Processes. ELLIS NLP Workshop at Oberwolfach Research Institute for Mathematics (MFO). <a href="#">[LINK]</a>
JULY 2022	Takmaz, E., Pezzelle, S. and Fernández, R. Time Alignment between Gaze and Speech in Image Descriptions: Exploring Theories of Linearization. In Proceedings of the Annual Meeting of the Cognitive Science Society <a href="#">[Abstract]</a>
MAY 2020	Takmaz, E., Pezzelle, S., Beinborn, L. and Fernández, R. Enhancing Image Captioning with Eye-Tracking. GeCKo symposium: Integrating Generic and Contextual Knowledge <a href="#">[Abstract]</a>
OCT 2019	Takmaz, E., Beinborn, L., Pezzelle, S. and Fernández, R. Enhancing Image Captioning with Eye-Tracking. EurNLP. London, United Kingdom <a href="#">[Abstract]</a> <a href="#">[Poster]</a>
AUG 2019	Takmaz, E., Beinborn, L., Pezzelle, S. and Fernández, R. Enhancing Image Captioning with Eye-Tracking. Interacting Minds Summer School in Egmond aan Zee, The Netherlands <a href="#">[Poster]</a>
SEP 2018	Shekhar, R., Takmaz, E., Kondylidis, N., Greco, C., Venkatesh, A., Bernardi, R. and Fernández, R. Learning to see from experience: But which experience is more propaedeutic? European Conference on Computer Vision, Workshop on Shortcomings in Vision and Language, Munich, Germany <a href="#">[Poster]</a>

AUG 2017	Gonul, G., Takmaz, E.K., Corballis, M. and Hohenberger A. Perceptual/motor and representational factors in tool innovation in children 25th Annual Meeting of the European Society for Philosophy and Psychology (ESPP) Hertfordshire, UK
APR 2017	Takmaz, E.K., Akbas, E. and Zeyrek, D. Turkish Language Models Utilizing Character- vs. Syllable-Based Recurrent Neural Networks. 4 <sup>th</sup> International Symposium on Brain and Cognitive Science, Ankara, Turkey
JUL 2016	Gonul, G., Hohenberger A. and Takmaz, E.K. Tool innovation in 5-6-year-old Turkish pre-school children: The effect of familiarity and salience of affordances 24th Biennial Meeting of the International Society for the Study of Behavioural Development, Vilnius, Lithuania
APR 2014	Takmaz, E.K. and Bozsahin, C. A Computational Study on Learning Theories and the Role of Planning in Maze-Learning Environments. 1 <sup>st</sup> International Symposium on Brain and Cognitive Science, Istanbul, Turkey

## GRANTS

**NGF AiNed XS Europe** grant (€80.000) covering my postdoc salary, conference, travel and accommodation costs for 7 months. I co-wrote the grant proposal titled ‘Multimodal context in multilingual referential communication: Integrating deep learning and human perception’ with Prof. Dr. Albert Gatt. We collaborate with researchers from Bielefeld University.

I obtained Small Compute (NWO) grants for GPU access from **Snellius - the Dutch National supercomputer** and **SURF HPC Cloud**, for 2 of my project proposals.

Utrecht University Social and Cognitive AI mini grant to be used in master’s thesis supervision

## INVITED TALKS

JAN 2026	Talk and visit at Bielefeld University
DEC 2025	Guest Lecture - VU Amsterdam Conversational AI bachelor’s course
DEC 2025	Invited Talk at Karlsruhe Institute of Technology Advanced NLP seminar
Nov 2025	Invited Talk at Yoav Artzi’s group at Cornell Tech
Nov 2025	Invited Talk at the CLASP Seminar at University of Gothenburg <a href="#">[LINK]</a>
Nov 2025	Invited Talk at the ILFC Seminar - Interactions between Formal and Computational Linguistics <a href="#">[LINK]</a>
OCT 2025	Invited Talk at the ‘Commonsense AI deep dive’ meeting at VU Amsterdam
DEC 2024	Guest Lecture - VU Amsterdam Conversational AI bachelor’s course
OCT 2024	Talk at Cohere For AI Open Science Community Research Communications event
OCT 2024	Invited Talk at the 7th International Seminar on Language and Interdisciplinary Research on Language
SEP 2024	Keynote at the 2nd Workshop on Linguistic Insights from and for Multimodal Language Processing (LIMO2024 @ KONVENS) <a href="#">[LINK]</a>
JUN 2024	Invited Talk at NLG in the Lowlands <a href="#">[LINK]</a>
JUN 2024	Invited Talk at the Workshop on NLP and Multi-Modality <a href="#">[LINK]</a>
SEP 2023	Talk at SEA: Search Engines Amsterdam, organized by IRLab at the University of Amsterdam

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SEP 2022 | Talk at the NLP Seminar of the University of Pittsburgh

SEP 2022 | Lecture for the Cognitive Science 3 course - University of Copenhagen

SEP 2022 | Guest Lecture for the Computational Dialogue Modelling course - University of Amsterdam

OCT 2021 | NLPhD talk, Department of Language Science and Technology - Saarland University

SEP 2021 | Lecture for the Cognitive Science 3 course - University of Copenhagen

MAR 2021 | KUIS AI Talks - Koç University [\[LINK\]](#)

## SERVICE

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REVIEWER | ACL, EMNLP, LREC, COLING, CoNLL, COLM, ARR, CLIN, INLG, ICML and NeurIPS workshops, IEEE Transactions on Image Processing

AREA CHAIR | CoNLL 2025, COLM 2025, COLING 2025 Multimodal NLP and Grounded Language Acquisition, HRI track

MAR 2025 - Present | Member of the organization committee of the Computational Psycholinguistics Meeting 2025 ([CPL](#))

SEP 2022 - Present | Member of the organization committee of the Cognitive Modeling and Computational Linguistics Workshop ([CMCL](#)), organized CMCL 2024 and 2025

JUL 2025 - Present | Member of the organization team of [NLP@U Joint Special Interest Group](#) across multiple departments where NLP researchers work in Utrecht

MAY 2024 | Organized [the Workshop on Modeling and Evaluating Visual and Linguistic Processes in Deep Neural Networks](#)

MAR 2020 - AUG 2022 | Member of the European Chapter of the Association for Computational Linguistics ([EACL](#)) Student Board

MAR 2020 - AUG 2022 | [EACL Student Research Workshop](#) Co-Chair

DEC 2019 - SEP 2022 | Member of the [Institute for Logic, Language and Computation \(ILLC\) PhD Council](#)

JUNE 2023 | Organized REST-CL (REtreat for Students in Computational Linguistics) [\[LINK\]](#)

APRIL 2022 | Organized REST-CL (REtreat for Students in Computational Linguistics) [\[LINK\]](#)

OCT 2016 | Local Organizing Committee - 4<sup>th</sup> International University Ranking by Academic Performance ([URAP](#)) Symposium "Significance of Field Rankings", Ankara, Turkey

APR 2015 | Local Organizing Committee - 2<sup>nd</sup> International Symposium on Brain and Cognitive Science ([ISBCS](#)), Ankara, Turkey

MAY 2014 | Local Organizing Committee - [Turkish-German Workshop: CogSci in Germany, CogSci in Turkey](#), Ankara, Turkey

## SUPERVISION

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Anaïs Aarntzen - Bachelor's thesis AI, Utrecht University  
Morgaine Prasetya - Bachelor's thesis AI, Utrecht University  
Ennis Vriens - Master's thesis AI, Utrecht University  
Ilke Asal - Literature thesis for MSc in Brain and Cognitive Sciences, University of Amsterdam  
Filippo Merlo - Master's thesis, Utrecht University, together with Prof. Dr. Albert Gatt  
Wenkai Chen - Master's student internship, Utrecht University, together with Prof. Dr. Albert Gatt  
Yavuz Alp Sencer Öztürk - Erasmus+ undergraduate student internship, Utrecht University  
Hanna-Sophia Widhoelzl - Research Master's Brain and Cognitive Sciences internship, UvA

## MENTORSHIP

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2024 - 2025 | Mentor - Bilkent University Computer Science Student Mentorship

2020 - 2021 | Mentor in 'Women in the Faculty of Science' at UvA

## MEMBERSHIP

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Since 2019 | Member of the Association for Computational Linguistics

Since 2020 | Member of the Cognitive Science Society

## COMPUTER SKILLS

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Python, PyTorch, TensorFlow, Java, C#, MATLAB, R, SPSS, Microsoft Kinect, Eye-Tracking, Unity3D, Linux OS, Microsoft Windows, PyCharm, Eclipse, Visual Studio, Android Development, Weka, ACT-R

## GRADUATE COURSES ASSISTED

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*(As a Teaching Assistant at ILLC, University of Amsterdam)*

Computational Dialogue Modelling

Natural Language Processing 1

Higher Cognitive Functions

Basic Probability Theory

*(As a Teaching Assistant at the Department of Cognitive Science, Middle East Technical University)*

Artificial Intelligence for Cognitive Science

Cognition and Machine Learning

Computational Models of Mind

Cognitive Algorithms

Linguistics and Formal Languages

Introduction to Cognitive Science

Research Methods and Statistics for Cognitive Science

Graduate Seminar for Cognitive Science

Human Memory

Introduction to Phonology

## AWARDS AND HONORS

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MAY 2022 | Best Shared Task Paper Award at the Cognitive Modeling and Computational Linguistics Workshop ([CMCL](#))

AUG 2019 | Cum laude Honours upon graduation, University of Amsterdam

MAY 2014 | Graduate Course Performance Award, Middle East Technical University

JUN 2012 | Graduated from Bilkent University with honors

AUG 2008 | Full Scholarship, Bilkent University, upon ranking 380th in the National University Entrance Exam among approximately 1.6 million students

## LANGUAGES

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TURKISH: Native  
ENGLISH: Fluent  
DUTCH: Upper Intermediate  
GERMAN: Intermediate  
PORTUGUESE: Beginner  
ITALIAN: Beginner