Andrea Madotto

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INDUSTRY EXPERIENCE

Member of Technical Staff — Thinking Machines Lab
San Francisco, CA — Dec 2025 – Now

Senior Research Scientist at FAIR — Meta
San Francisco, CA — Jan 2022 – Dec 2025

- Meta's Ray-Ban: Designed and developed the first Multimodal LLM shipped in Meta's Ray-Ban smart glasses.
- Perception Encoder: Led the data engine and MLLM benchmarking for a state-of-the-art vision encoder, later integrated into Llama 4, and achieved best-in-class performance on zero-shot image/video classification, MLLM, and Detection benchmarks.
- Perception LM: Led the scaling-law analysis, dataset development, and overall research direction of a state-of-the-art MLLM that achieved top performance on 30+ public benchmarks without relying on proprietary model distillation.
- LLM-driven UI-Agents: Designed and implemented a novel data collection platform for LLM-driven UI agents on Android OS.

Research Scientist Intern at Meta AI — Facebook
Remote — Aug 2020 – Dec 2020

- Conducted research on Continual Learning for Task-Oriented Dialogue Systems; proposed a large-scale benchmark and a novel algorithm for the task.

Data Science Intern at UberAI — UberAI
San Francisco, CA — Jun 2019 – Sept 2019

- Conducted research on text-based games (e.g., TextWorld) using reinforcement learning (RL) algorithms and controllable language generation.

EDUCATION

The Hong Kong University of Science and Technology, Hong Kong
Ph.D. in Electronic & Computer Engineering, Sept 2018 - Nov 2021 — GPA: 4.3/4.3

University of Pisa, Italy
Master's Degree in Computer Science, 2015 - 2017 — Final mark: 110/110 (Honours)

University of Perugia, Italy
B.Sc. in Computer Science, 2011 - 2014 — Final mark: 110/110 (Honours)

SELECTED PUBLICATIONS

[**NeurIPS 2025**] **Andrea Madotto**, Daniel Bolya, Po-Yao Huang, Peize Sun, Jang Hyun Cho, Chen Wei, Tengyu Ma, Jiale Zhi, Jathushan Rajasegaran, Hanoona Rasheed, Junke Wang, Marco Monteiro, Hu Xu, Shiyu Dong, Nikhila Ravi, Daniel Li, Piotr Dollr, Christoph Feichtenhofer. Perception encoder: The best visual embeddings are not at the output of the network. Selected as an Oral presentation (77 out of 4,525 accepted papers from 21K submissions).

[**NeurIPS 2025**] **Andrea Madotto**, Jang Hyun Cho, Effrosyni Mavroudi, Triantafyllos Afouras, Tushar Nagarajan, Muhammad Maaz, Yale Song, Tengyu Ma, Shuming Hu, Suyog Jain, Miguel Martin, Huiyu Wang, Hanoona Rasheed, Peize Sun, Po-Yao Huang, Daniel Bolya, Nikhila Ravi, Shashank Jain, Tammy Stark, Shane Moon, Babak Damavandi, Vivian Lee, Andrew Westbury, Salman Khan, Philipp Krhenbhl, Piotr Dollr, Lorenzo Torresani, Kristen Grauman, Christoph Feichtenhofer. PerceptionLM: Open-Access Data and Models for Detailed Visual Understanding. Selected as a Spotlight (688 out of 4,525 accepted papers from 21K submissions) and received the 4th highest score at the conference.

[**EMNLP2023**] **Andrea Madotto**, Seungwhan Moon, Zhaojiang Lin, Tushar Nagarajan, Matt Smith, Shashank Jain, Chun-Fu Yeh, Prakash Murugesan, Peyman Heidari, Yue Liu, Kavya Srinet,

Babak Damavandi, and Anuj Kumar. AnyMAL: An Efficient and Scalable Any-Modality Augmented Language Model.

[**ACM Computing Surveys**] Ziwei Ji, Nayeon Lee, Rita Frieske, Tiezheng Yu, Dan Su, Yan Xu, Etsuko Ishii, Ye Jin Bang, Pascale Fung and **Andrea Madotto**. Survey of hallucination in natural language generation. ACM Computing Surveys 2023, https://doi.org/10.1145/3571730.

[**ICLR2020**] Sumanth Dathathri, **Andrea Madotto**, Janice Lan, Jane Hung, Eric Frank, Piero Molino, Jason Yosinski, Rosanne Liu. Plug and Play Language Models: a Simple Approach to Controlled Text Generation. ICLR 2020 (Oral).

[**EMNLP2021**] **Andrea Madotto**, Zhaojiang Lin, Zhenpeng Zhou, Seungwhan Moon, Paul Crook, Bing Liu, Zhou Yu, Eunjoon Cho, Zhiguang Wang, Pascale Fung. Continual Learning in Task-Oriented Dialogue Systems. EMNLP 2021 (Oral).

[**IJCAI2020**] **Andrea Madotto**, Mahdi Namazifar, Joost Huizinga, Piero Molino, Adrien Ecoffet, Huaixiu Zheng, Alexandros Papangelis, Dian Yu, Chandra Khatri, Gokhan Tu. Exploration Based Language Learning for Text-Based Games. IJCAI 2020 (Oral).

[**NeurIPS-ConvAI**] **Andrea Madotto**, Zhaojiang Lin, Chien-Sheng Wu, Jamin Shin, Pascale Fung. Attention over Parameters for Dialogue Systems. NeurIPS-ConvAI Workshop 2019, **Oral and Best Paper Award**.

[**ACL2019**] Chien-Sheng Wu, **Andrea Madotto**, Ehsan Hosseini-Asl, Caiming Xiong, Richard Socher, Pascale Fung. Transferable Multi-Domain State Generator for Task-Oriented Dialogue Systems. ACL 2019, **Outstanding Paper Award (5 papers were selected out of 2905 submissions)**.

[**ACL2018**] **Andrea Madotto**, Chien-Sheng Wu, Pascale Fung. Mem2Seq: Effectively Incorporating Knowledge Bases into End-to-End Task-Oriented Dialog Systems. ACL 2018.

Full list available in Google Scholar.

PROFESSIONAL ACTIVITY

General Chair ACL Student Research Workshop (SRW) 2022.

Area Chair ACL Rolling Review (ARR) 22-25, AACL 22, EACL 22, ACL 23.

Tutorial presenter at NeurIPS 2020. Title: "Deeper Conversational AI".

Reviewer NAACL 2019, EMNLP 2019, ACL 2019, AAAI 2020, ACL 2020, EMNLP 2020, ICLR 2020, NeurIPS 2020, AAAI 2021, ICML 2021, NAACL 2021, ACL 2021, EMNLP 2021, NeurIPS 2021, AAAI 2022, ICLR 2022, ICLR 2023, ICML 2023, NeurIPS 2023, ICLR 2023, ICLR 2024, ICLR 2025, NeurIPS 2024, NeurIPS 2025.

AWARD

Outstanding Paper Award ACL 2019 (5 papers were selected out of 2905 submissions) for Transferable Multi-Domain State Generator for Task-Oriented Dialogue Systems.

Best Paper Award ConvAI-NeurIPS 2019 for Attention Over Paramters for Dialogue Systems.

PhD Award 2019-20 School of Engineering (SENG) Academic Award for PhD Students.

MEDIA COVERAGE

MIT-Technology Review for the paper: Plug and Play Language Models: a Simple Approach to Controlled Text Generation. Link: Article.

Venture Beats for the paper: Plug and Play Language Models: a Simple Approach to Controlled Text Generation. Link: Article.

Venture Beats for the paper: Exploration Based Language Learning for Text-Based Games. Link: Article.

LANGUAGE SKILLS

Languages: Italian (mother tongue) • English (Full-Proficiency)• Chinese (basic)