Chen Amiraz, Ph.D. – AI Researcher

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AI researcher specializing in large language models, natural language processing, and information retrieval. Proven track record of designing, analyzing, and delivering machine learning and deep learning systems across industry and academia. Published in top-tier venues including ACL and AISTATS. Passionate about leveraging my mathematical background and AI skills to solve challenging and impactful problems.

Work Experience

AI Researcher, Technology Innovation Institute (2024-present)

- Design, analyze, and improve Retrieval-Augmented Generation systems for enterprise data.
- Develop methods to quantify the distracting effect of irrelevant passages on LLMs and reduce their impact through fine-tuning [2], as well as study language bias in cross-lingual retrieval [1].
- Lead projects from design to evaluation, with results accepted for oral presentation at ACL '25.
- Implement production-quality, maintainable code following software engineering best practices.

Machine Learning Scientist, Booking.com (5-Month Internship, 2023-2024)

Developed deep learning and GenAI algorithms to dynamically extend personalized travel recommendations in an LLM-based trip planning chatbot, while handling diverse user preferences and huge, variable datasets.

AI Researcher, K Health (3-Month Internship, 2019)

Built patient similarity metrics with machine learning, deep learning, and NLP on 40M electronic medical records that were later adopted in production. Included data analysis, autoencoder training, and evaluation.

Signal and Image Processing Researcher, RAFAEL (Student Position, 2012-2013)

Education

Ph.D. in Computer Science, Weizmann Institute of Science (2016-2024)

Thesis title: "Sparse Estimation Problems: Recovery Guarantees and Distributed Algorithms." GPA: 96.
Advisors: Prof. Robert Krauthgamer & Prof. Boaz Nadler.

- Developed efficient algorithms for distributed sparse denoising [4] and linear regression [3], and established theory for sparse signal recovery [5], resulting in three publications, including AISTATS '24.
- Conducted Python and MATLAB simulations on a Linux computing cluster, providing empirical evidence for each paper's theoretical claims, and showcasing performance in large-scale settings.

M.Sc. in Computer Science, Weizmann Institute of Science, Collaboration with MIT (2014-2016)

Thesis title: "Stochastic Combinatorial Optimization with Testing". Thesis grade: 97. GPA: 92.7.
Advisors: Prof. Robert Krauthgamer (Weizmann) & Prof. Retsef Levi (MIT).

- Designed efficient optimal and near-optimal policies for stochastic combinatorial optimization problems, addressing exploration-exploitation trade-offs with applications in Operations Research [6].

Visiting Graduate Student, Massachusetts Institute of Technology (Spring semester 2015)

B.Sc. in Electrical Engineering, Technion (2009-2013)

- Graduated with honors from the Technion EMET excellence program. GPA: 93.3, Dean's list (top 4%).
- Led three research projects focusing on novel signal and image processing techniques in collaboration with Yoav Schechner & NASA, Yonina Eldar [7], and SIPL & RAFAEL [7], yielding two publications.

Honors and Awards

- Three KKL-JNF Excellence Scholarships (2014, 2022, 2023)
- Weizmann Young Female Leaders in Science Program (2018)
- Google Women Techmakers (Anita Borg) Scholarship (2017)
- Microsoft Women of Excellence Program (2016)
- Intel Academic Excellence Award (2012)
- Technion EMET Excellence Program (2009-2013)

Languages

Hebrew (native), English (full professional), French (elementary).

Programming Skills

Languages: Python, R, MATLAB
Libraries / Frameworks: PyTorch, Hugging Face libraries, MLflow
Databases / Big Data: SQL, PySpark
Environments / Tools: Git, Linux, Jupyter, VSCode, PyCharm, AWS

Contributed Talks

- The Distracting Effect: Understanding Irrelevant Passages in RAG, oral presentation at ACL (2025)
- How a Thousand Little Failures Turn into Success, lightning talk at Women in Data Science (2022)

Teaching

- Course Assistant for Statistical Inference and Learning, Sub-Linear Algorithms, Ordinary Differential Equations, and Linear Algebra, Weizmann Institute of Science (2014-2019)
- Project Advisor, De-Shalit Summer Program, Weizmann Institute of Science (2014-2017)

Professional Service

- Program Committee Member, Conference on Information and Knowledge Management (CIKM 2025)
- Reviewer, ACM Computing Surveys (2024)
- Sub-reviewer under Prof. Robert Krauthgamer, the International Colloquium on Automata, Languages, and Programming (ICALP 2018) and the European Symposium on Algorithms (ESA 2017)

Volunteering

- Mentor for early-stage professionals, Women in Data Science Community (2024-present)
- Founder and President, Weizmann Debate Club (2017-2020)
- Founder and Head of the Weizmann Forum for Women in CS and Math (2016-2020)

Papers*

[1] **C. Amiraz**, Y. Fyodorov, E. Haramaty, Z. Karnin, and L. Lewin-Eytan, "The Cross-Lingual Cost: Retrieval Biases in RAG over Arabic-English Corpora", under review (2025)

[2] **C. Amiraz**, F. Cuconasu, S. Filice, and Z. Karnin, "The Distracting Effect: Understanding Irrelevant Passages in RAG," accepted for publication in *Proceedings of the 63rd Annual Meeting of the Association for Computational Linguistics* (ACL 2025)

[3] **C. Amiraz**, R. Krauthgamer, and B. Nadler, "Recovery Guarantees for Distributed-OMP," *Proceedings of the 27th International Conference on Artificial Intelligence and Statistics* (AISTATS 2024)

[4] **C. Amiraz**, R. Krauthgamer, and B. Nadler, "Distributed Sparse Normal Means Estimation with Sublinear Communication," *Information and Inference: A Journal of the IMA* (2022)

[5] **C. Amiraz**, R. Krauthgamer, and B. Nadler, "Tight Recovery Guarantees for Orthogonal Matching Pursuit Under Gaussian Noise," *Information and Inference: A Journal of the IMA* (2020)

[6] **C. Attias**, R. Krauthgamer, R. Levi, and Y. Shaposhnik, "Stochastic Selection Problems with Testing," unpublished, presented at *INFORMS* (2015)

[7] A. Amar, S. Ben-Sultan, and **C. Attias**, "Partitioning Continuous Segmented Signals," *Electronics Letters* (2014)

[8] K. M. Cohen, **C. Attias**, B. Farbman, I. Tselniker, and Y. C. Eldar, "Channel Estimation in UWB Channels Using Compressed Sensing," *Proceedings of the 39th IEEE International Conference on Acoustics, Speech and Signal Processing* (ICASSP 2014)

* Papers prior to 2020 appear under previous name, C. Attias.