

Alperen Gozeten

 Google Scholar  GitHub  LinkedIn

 alperen@umich.edu |  +1 (734) 510-8399 |  Ann Arbor, MI

EDUCATION

- **University of Michigan** Ann Arbor, MI
Ph.D. Candidate in EECS, GPA: 4.00 / 4.00, Advisor: Prof. Samet Oymak August 2024 – Present
- **Bilkent University** Ankara, Turkey
B.S. in Computer Science, GPA: 4.00 / 4.00, Valedictorian (Rank: 1st/170) August 2019 – June 2024

RESEARCH & INDUSTRY EXPERIENCE

Research Interests: Reliable and efficient reasoning and adaptation in foundation models, including continuous reasoning, reinforcement learning, test-time adaptation, and LLM-guided discovery.

- **University of Michigan – SOTA Lab** Ann Arbor, MI
Graduate Researcher, advised by Prof. Samet Oymak August 2024 – Present
 - Developed theoretical and algorithmic foundations for generalization and test-time adaptation in foundation models. Established a high-dimensional framework for weak-to-strong generalization and designed gradient-based test-time training for in-context learning transformers, reducing required in-context samples by 3–5× with tabular foundation models. (**ICLR 2025 Spotlight; ICML 2025**)
 - Developed continuous-token reasoning methods that enable language models to explore multiple reasoning paths in parallel. Extended the approach to multiplexed continuous reasoning, allowing multiple reasoning streams to share computation while preserving individual outputs. (**ICLR 2026; NeurIPS 2026 Spotlight**)
 - Developed calibrated reinforcement-learning methods for multi-attempt reasoning in language models, deriving unbiased, low-variance policy-gradient objectives across repeated attempts to improve training efficiency and reasoning performance. (**ICML 2026**)
 - Developed a multi-task evolutionary framework for LLM-guided program discovery that shares evolutionary search across related tasks before task-specific adaptation, improving search efficiency and performance while transferring effectively to unseen tasks. (**AI for Math and DL4C Workshops at ICML 2026**)
- **Waymo** San Francisco, CA
PhD Software Engineer Intern, Simulation June 2026 – September 2026
 - Developed an ML model to identify autonomous-driving simulation segments most sensitive to software changes, enabling prioritization of scenarios likely to reveal meaningful behavioral differences between system versions.
 - Built end-to-end pipelines for data generation, model training, and evaluation, outperforming existing baselines in predictive performance.
- **Spiky.ai** Remote (from Turkey)
Machine Learning Engineer August 2023 – August 2024
 - Evaluated and fine-tuned open-source LLMs for NLP tasks including sentiment and emotion analysis, summarization, and action-item extraction from English- and Turkish-language conversations. Used larger language models to generate synthetic training data tailored to company-specific use cases.
 - Actively contributed to the production by implementing new features and system enhancements, and integrated AWS services to deploy, manage, and scale machine-learning solutions.
- **EPFL-Indy Lab** Lausanne, Switzerland
Research Intern June 2023 – September 2023
 - Completed the internship as part of the Summer@EPFL program, which admits 30–40 students globally each year.
 - Worked under the supervision of Dr. Maximilien Dreveton on finding a universal bound for the exact recovery of communities in Exponential Family Mixture Models, and co-authored the paper *Universal Lower Bounds and Optimal Rates: Achieving Minimax Clustering Error in Sub-Exponential Mixture Models*, published in COLT.
- **IST Austria – DASLab** Vienna, Austria
Research Intern June 2022 – September 2022
 - Worked with Prof. Dan Alistarh on making Learned Bloom Filters dynamic, developing methods to incorporate new data without retraining the underlying classifier from scratch.
 - Analyzed and implemented first- and second-order classifier updates and Bloom Filter-based baselines; evaluated their performance across synthetic, URL, and MNIST datasets using neural models of varying complexity.

• **Carbon Health**
• **Software Developer Intern**

Remote (from Turkey)
July 2021 – September 2021

- Implemented an internal Gradle plugin that generated HTTP reverse proxies from gRPC/Protocol Buffers definitions, reducing load on the monolith and supporting Java/Kotlin Armeria servers. Integrated Google's grpc-gateway and contributed bug fixes to this open-source project.

PUBLICATIONS

7 peer-reviewed conference papers (1 NeurIPS Spotlight; 2 ICLR, including 1 Spotlight; 2 ICML; 1 AISTATS; 1 COLT) and 1 peer-reviewed workshop paper

Peer-Reviewed Conference Papers

- **MUX: Continuous Reasoning via Multiplexed Tokens.** Ayhan Suleymanzade, Halil Alperen Gozeten, Michael Bronstein, İsmail İlkan Ceylan[†], and Jinwoo Kim[†]. **NeurIPS 2026 Spotlight**; arXiv:2607.18264.
🎤 **Invited Talks:** Google DeepMind and NVIDIA
- **Continuous Chain of Thought Enables Parallel Exploration and Reasoning.** Halil Alperen Gozeten*, M. Emrullah Ildiz*, Xuechen Zhang, Hrayr Harutyunyan, Ankit Singh Rawat, and Samet Oymak. **ICLR 2026**.
- **Learning to Correct: Calibrated Reinforcement Learning for Multi-Attempt Chain-of-Thought.** M. Emrullah Ildiz*, Halil Alperen Gozeten*, Ege Onur Taga, and Samet Oymak. **ICML 2026**.
- **Filter, Augment, Forecast: Online Data Selection for Robust Time Series Forecasting.** Ege Onur Taga, Halil Alperen Gozeten, Kutay Tire, Rahul Dalvi, Reinhard Heckel, and Samet Oymak. **AISTATS 2026**.
- **Test-Time Training Provably Improves Transformers as In-context Learners.** Halil Alperen Gozeten*, M. Emrullah Ildiz*, Xuechen Zhang, Mahdi Soltanolkotabi, Marco Mondelli, and Samet Oymak. **ICML 2025**.
- **High-dimensional Analysis of Knowledge Distillation: Weak-to-Strong Generalization and Scaling Laws.** M. Emrullah Ildiz*, Halil Alperen Gozeten*, Ege Onur Taga, Marco Mondelli[†], and Samet Oymak[†]. **ICLR 2025 Spotlight**.
- **Universal Lower Bounds and Optimal Rates: Achieving Minimax Clustering Error in Sub-Exponential Mixture Models.** Maximilien Drevet, Halil Alperen Gozeten, Matthias Grossglauser, and Patrick Thiran. **COLT 2024**.

Peer-Reviewed Workshop Papers

- **Evolutionary Multi-Task Optimization for LLM-Guided Program Discovery.** Halil Alperen Gozeten, Xuechen Zhang, M. Emrullah Ildiz, Ege Onur Taga, Tara Javidi, and Samet Oymak. **3rd AI for Math Workshop and 5th Deep Learning for Code (DL4C) Workshop at ICML 2026**; arXiv:2605.22613.

* Equal contribution. † Equal advising.

TECHNICAL SKILLS

Languages: Python, C/C++, Julia, Java, SQL, R, JavaScript

ML Frameworks & Systems: PyTorch, JAX, CUDA, Hugging Face Transformers, vLLM, NumPy, Pandas

Infrastructure & Tools: Slurm, Docker, Git, Weights & Biases, AWS, Google Cloud

AWARDS AND HONORS

- **University of Michigan Electrical and Computer Engineering Departmental Fellowship:** Competitive departmental fellowship supporting doctoral study in ECE; awarded for academic excellence and research potential.
- **Google Cloud Research Credits Award — Continuous Chain of Thought Models:** Research project awarded \$35,000 in Google Cloud credits to support continued research on continuous chain-of-thought models, building on *Continuous Chain of Thought Enables Parallel Exploration and Reasoning*.
- **PrioVar (Best Senior Design Project Award):** Developed PrioVar in a five-member team under the supervision of Prof. A. Ercument Cicek to prioritize variants for rare-disease diagnosis. Designed random-walk graph learning methods integrating phenotype/genotype data to rank variants by pathogenicity, and built a Neo4j-backed application with React, Flask, and Spring.
- **International Mathematical Olympiad (IMO):** Bronze Medal — 2019, 2018.
- **Balkan Mathematical Olympiads:** Balkan Mathematical Olympiad (BMO): Silver Medal — 2019, 2018; Junior Balkan Mathematical Olympiad (JBMO): Silver Medal — 2015.

PROFESSIONAL SERVICE & COMMUNITY ENGAGEMENT

- **Graduate Student Instructor (GSI), EECS 498/598: Foundations of Large Language Models:** University of Michigan, Fall 2025.
- **Academic Reviewing:** Reviewer for ICLR and AI4Math Workshops at ICML.
- **TUBITAK Mentorship Program:** Mentored 7 high-school students in mathematical olympiad training and competitive opportunities; several mentees progressed to the national team.
- **YES (Young Entrepreneurship Society):** Organized events, managed company outreach, and secured sponsorships for Bilkent University's entrepreneurship club.