Eugenia Iofinova

4th Year Ph.D. Student at IST Austria
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RESEARCH INTERESTS

Trustworthy machine learning (generalization, robustness, bias, fairness, interpretability, algorithmic recourse, and privacy); efficient machine learning.

EDUCATION

Institute of Science and Technology Austria — **Vienna, Austria**
Ph.D. Student in Computer Science — *September 2020 -*
Supervisor: Dan Alistarh

California Institute of Technology — **Pasadena, CA**
B.S., Mathematics — *September 2002-June 2006*
GPA: 3.6/4.0 (Honors)

OTHER RESEARCH EXPERIENCE

Microsoft Research — **Redmond, Washington**
Research Internship, Special Projects Team — *May 2024-Aug 2024*
Project: Evaluating unlearning in LLMs using fully-synthetic data.

Institute of Science and Technology Austria — **Vienna, Austria**
Research Internship, Alistarh Group — *June 2020-September 2020*
Project: Weight and gradient pruning for image recognition models.

University of Vienna — **Vienna, Austria**
Pandemic Forecasting Task Force — *May 2020-Aug 2020*
Project: Forecasting the spread of the COVID-19 pandemic in Austria under different mitigation scenarios (available at epimath.at).

Center for Molecular Medicine, Austrian Academy of Sciences (CeMM) — **Vienna, Austria**
Guest Scientist, Menche Group — *April 2019-June 2020*
Project 1: DataDiVR: Interactive 3D Virtual Reality viewer for large biological networks. (paper)
Project 2: RadiPOP: Outcome predictions for Portal Hypertension from CT scans. (patent submitted; paper in preparation)

UCLA Institute for Pure and Applied Mathematics (IPAM) — **Los Angeles, CA**
Co-supervisor, Summer undergraduate research internship — *June 2017-Aug 2017*
Project: Simulate human errors in document labeling and create optimal strategies for minimizing prediction errors due to these given a limited rating budget. (Team size: 4 students)

California Institute of Technology — **Pasadena, CA**
Summer undergraduate research internship, Aschbacher group — *July 2005-September 2005*
Project: Rewrite some finite group theory results to fusion systems framework.

California Institute of Technology **Pasadena, CA**
Summer undergraduate research fellowship, Alvarez group *July 2004-September 2004*
Project: Comparison of absentee voting protocols in democratic nations.

PROFESSIONAL EXPERIENCE

Google **Los Angeles, CA**
Software Engineer → Senior Software Engineer *December 2014-February 2019*

- Built first-of-their-kind deep learning-based binary and taxonomic classifiers for predicting subject matter and sensitive content in text and video ads.
- Developed and launched ML fairness initiative in ads to correct biased misclassifications.

Castlight Health **San Francisco, CA**
Web Engineer → ML Engineer → Technical Manager, Analytics *November 2009-December 2014*
Built and deployed models for pricing services and predicting patient behavioral changes.

Upward Bound **San Francisco, CA**
Teacher (*summer school in chemistry and physics*) *March 2009 - July 2009*

Susquehanna International Group **Philadelphia, PA**
Algorithmic Trader *May 2006 - Jan 2009*

PUBLICATIONS

* denotes equal contribution.

- **Eugenia Iofinova**. Pushing the Boundaries of AI Art: an Immodest Proposal. Accepted (short talk) at NeurIPS for Creativity 2924.
- Armand Nicolicioiu*, **Eugenia Iofinova***, Eldar Kurtic*, Mahdi Nikdan*, Andrei Panferov, Ilia Markov, Nir Shavit, Dan Alistarh. Panza: A Personalized Text Writing Assistant via Data Playback and Local Fine-Tuning. Submitted for review; preprint available at https://arxiv.org/abs/2407.10994.
- Giacomo Aldegheri, Alina Rogalska*, Ahmed Youssef*, **Eugenia Iofinova***. Hacking Generative Models with Differential Network Bending. Accepted at NeurIPS Machine Learning for Creativity and Design Workshop 2023. Preprint available at https://arxiv.org/abs/2310.04816.
- Arshia Soltani Moakhar*, **Eugenia Iofinova***, Dan Alistarh. SPADE: Sparsity-Guided Debugging for Deep Neural Networks. Published at ICML'24. Preprint available at https://arxiv.org/abs/2310.04519.
- Denis Kuznedelev*, Eldar Kurtic*, **Eugenia Iofinova***, Elias Frantar, Alexandra Peste, Dan Alistarh. Accurate Neural Network Pruning Requires Rethinking Sparse Optimization. Published at TMLR; preprint available at https://arxiv.org/abs/2308.02060.
- Mahdi Nikdan*, Tommaso Pegolotti*, **Eugenia Iofinova**, Eldar Kurtic, Dan Alistarh. SparseProp: Efficient Sparse Backpropagation for Faster Training of Neural Networks. Accepted for short oral presentation at ICML'23; preprint available at https://arxiv.org/abs/2302.04852.
- **Eugenia Iofinova**, Alexandra Peste, Dan Alistarh. Bias in Pruned Vision Models: In-Depth Analysis and Countermeasures. Published at CVPR'23; preprint available at https://arxiv.org/abs/2304.12622.
- **Eugenia Iofinova***, Alexandra Peste*, Mark Kurtz, Dan Alistarh. How Well Do Sparse ImageNet Features Transfer? Published at CVPR'22; preprint available at http://arxiv.org/abs/2111.13445.
  🏆 Winner, best poster at Eastern European Machine Learning Summer School 2022
- **Eugenia Iofinova***, Nikola Konstantinov*, Christoph H. Lampert. FLEA: Provably Fair Multisource Learning from Unreliable Training Data. TMLR, Oct 2022; available at https://openreview.net/forum?id=XsPopigZXV.

- Alexandra Peste, **Eugenia Iofinova**, Adrian Vladu, Dan Alistarh. AC/DC: Alternating Compressed/DeCompressed Training of Deep Neural Networks. published at NeurIPS 2021; preprint available at http://arxiv.org/abs/2106.12379.
- Sebastian Pirch, Felix Müller, **Eugenia Iofinova**, Julia Pazmandi, Christiane VR Hütter, Martin Chiettini, Celine Sin, Kaan Boztug, Iana Podkosova, Hannes Kaufmann, Jörg Menche. The VRNetzer platform enables interactive network analysis in Virtual Reality. Nature Communications, 23 April 2021.
- Manu Eder, Joachim Hermisson, Michal Hledik, Christiane Hütter, **Eugenia Iofinova**, Rahul Pisupati, Jitka Polechova, Gemma Puixeu, Srdjan Sarikas, Benjamin Wölfl, Claudia Zimmermann. EpiMath Austria SEIR: A COVID-19 Compartment Model for Austria. preprint available at https://www.epimath.at/static/EpiMathAustria_SEIR_documentation.pdf

SELECTED TALKS

- **Eugenia Iofinova**, "Accurate Neural Network Pruning Requires Rethinking Sparse Optimization", Cohere for AI Efficiency track, 3 Nov 2023.
- **Eugenia Iofinova**, "Move Fast and Break Things - Now What? (On algorithmic bias)", IST Austria Ph.D. Retreat, 08 October 2021
- **Eugenia Iofinova** and Bobby Rajesh Malhotra, "Neural Network Image Synthesis Algorithms & Reinterpretations – Geschichtes Gedicht Augmented", Virtuelle Kunst im Museum Donau-Universität Krems, 13 Sept 2019
- **Eugenia Iofinova** and Marzia Polito, Machine Learning Fairness in Display Ads, Google Internal Summit, Oct 2018
- John Zedlewski, **Eugenia Iofinova**, and Arjun Kulothungun, Analytics in Healthcare Consumerism, O'Reilly StrataRx, 16 Oct 2012

COMMUNITY SERVICE

- Reviewer for CVPR 2022, ICML 2023 (reduced load), NeurIPS 2023, CVPR 2024, NeurIPS 2024, ICLR 2025, TMLR (2024-).
- Community Lead (The Big Picture / ML for Social Good), Cohere for AI
- Selected to represent ISTA for the #STEMLooksLikeMe campaign (`https://ist.ac.at/en/stemlookslikeme/`).
- Volunteer translator for Ukrainian refugee center Vienna, Train of Hope
- Community outreach to local high schools, IST Austria
- Los Angeles Chapter lead and Community Service lead, Women@Google
- Lead organizer, Castlight Health Dev Reading Group