

Eugenia Iofinova

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RESEARCH INTERESTS

I study bias in machine learning systems (and by extension, algorithmic fairness, interpretable ML, and generalization) in the context of compressed deep neural network models.

EDUCATION

Institute of Science and Technology Austria

Ph.D. Student in Computer / Data Science

Supervisor: Dan Alistarh

Proposed thesis project: The effects of model compression on bias

Vienna, Austria

September 2020-present

California Institute of Technology

B.S., Mathematics

GPA: 3.6/4.0 (Honors)

Pasadena, CA

September 2002-June 2006

RESEARCH EXPERIENCE

Institute of Science and Technology Austria

Research Internship, Alistarh Group

Project: Weight and gradient pruning for image recognition models.

Vienna, Austria

June 2020-September 2020

University of Vienna

Pandemic Forecasting Task Force

Project: Forecasting the spread of the COVID-19 pandemic in Austria under different mitigation scenarios (available at epimath.at).

Vienna, Austria

May 2020-Aug 2020

Center for Molecular Medicine (CeMM)

Research Internship, Menche Group

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)

Vienna, Austria

April 2019-June 2020

UCLA Institute for Pure and Applied Mathematics (IPAM)

Co-supervisor, Summer undergraduate research internship

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)

Los Angeles, CA

June 2017 - Aug 2017

California Institute of Technology

Summer undergraduate research internship, Aschbacher group

Project: Rewrite some finite group theory results to fusion systems framework.

Pasadena, CA

July 2005-September 2005

California Institute of Technology

Summer undergraduate research fellowship, Alvarez group

Project: Comparison of absentee voting protocols in democratic nations.

Pasadena, CA

July 2004-September 2004

PROFESSIONAL EXPERIENCE

Google

Software Engineer / Senior Software Engineer

Los Angeles, CA

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

Web Developer / ML Engineer / Strategic Analytics

San Francisco, CA

November 2009–December 2014

Built and deployed models for pricing services and predicting patient behavioral changes.

Upward Bound

Teacher (summer school in chemistry and physics)

San Francisco, CA

March 2009 - July 2009

Susquehanna International Group

Algorithmic Trader

Philadelphia, PA

May 2006 - Jan 2009

PUBLICATIONS

- **Eugenia Iofinova***, Alexandra Peste*, Mark Kurtz, Dan Alistarh. How Well Do Sparse ImageNet Features Transfer? submitted for review; preprint available at <http://arxiv.org/abs/2111.13445>.
- **Eugenia Iofinova***, Nikola Konstantinov*, Christoph H. Lampert. FLEA: Provably Fair Multisource Learning from Unreliable Training Data. submitted for review; preprint available at <http://arxiv.org/abs/2106.11732>.
- Alexandra Peste, **Eugenia Iofinova**, Adrian Vladu, Dan Alistarh. AC/DC: Alternating Compressed/DeCompressed Training of Deep Neural Networks. accepted at NeurIPS 2021; preprint available at <http://arxiv.org/abs/2106.12379>.
- Sebastian Pirch, Felix Müller, **Eugenia Iofinova**, Julia Pazmandi, Christiane VR Hütter, Martin Chiettoni, 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**, "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 Ads Internal Summit, Oct 2018
- John Zedlewski, **Eugenia Iofinova**, and Arjun Kulothungun, Analytics in Healthcare Consumerism, O'Reilly StrataRx, 16 Oct 2012