

Ilya Kavalero

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EDUCATION **University of Maryland**, College Park 2015 - Nov 2020
PhD, EE Advisor: Rama Chellappa, Math Co-Advisor: Wojciech Czaja
Thesis: Impact of Semantics, Physics, and Adversarial Mechanisms in Deep Learning

Columbia University, New York 2014 - 2015
Post Baccalaureate
Coursework: Machine Learning, Advanced Machine Learning

George Washington University, Washington DC 2009 - 2013
BS in Chemistry, BA in Honors English
Won George Gamow Research Fellowship Award, won Sylvia Speck Prize for Exemplary Achievement in English Literature

TECHNICAL SKILLS **Languages** : Python, Matlab, C++, Javascript, Ruby, Mathematica
ML : Tensorflow, Pandas, Librosa, PyTorch, OpenCV, Kaldi
Google : Flume, Borg, Colab, Plx
General : Deep Learning for Images and Audio, Harmonic Analysis, Real Analysis, Advanced DSP, Estimation and Detection, Random Processes, Information Theory

EXPERIENCE **Google (MTV): Geo Machine Perception Intern** **May 19 - Aug 19**

- Improved previous object RGB distance estimation model by 3 meters avg absolute error, and produced a new uncertainty measure with each estimate.
- Wrote parallelized pipeline to incorporate previously unused image and LiDAR data for distance estimation from StreetView sensors.

Google (CAM): Sound Understanding, Research Intern **May 18 - Aug 18**

- Wrote parallelized data generation pipeline in Python and C++ to mix hours of audio in minutes.
- Implemented a Deep Learning network in Tensorflow to separate arbitrary mixed audio sources with 7 dB gain invariant SNR improvement over noisy mixtures.

Artsy (New York): Software Engineer **Sep 13 - May 15**

- Extracted insights from art and sales data to influence company sales and product strategy.
- Created a real time event stream architecture, streamlined the offline data processing workflow, consolidated and made company data accessible to start a data-driven culture.

PUBLICATIONS **cGANs with Multi-Hinge Loss**, Ilya Kavalero, Wojciech Czaja, Rama Chellappa
IEEE WACV 2021, arXiv:1912.04216

Three-Dimensional Fourier Scattering Transform and Classification of Hyperspectral Images, Ilya Kavalero, Weilin Li, Wojciech Czaja, Rama Chellappa
IEEE Transactions on Geoscience and Remote Sensing, DOI:10.1109/TGRS.2020.3040203

Universal Source Separation, Ilya Kavalero, Scott Wisdom, Hakan Erdogan, Brian Patton, Kevin Wilson, Jonathan Le Roux, John R. Hershey
IEEE WASPAA 2019, arXiv:1905.03330 (Written during 2018 Google Internship)