BARUCH TABANPOUR

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EDUCATION

Columbia University May 2015

MSc Applied Physics and Applied Mathematics
GPA: 3.87 / 4.00
Relevant Coursework: Machine Learning, Advanced Machine Learning, Statistical Mechanics
TA: Partial Differential Equations, Crystallography

The City College of New York, Macaulay Honors College February 2014

Bachelor of Engineering in Electrical Engineering
Minor in Physics
GPA: 3.96 / 4.00, Rank: 1/152

WORK EXPERIENCE

Machine Learning Engineer – **Squarespace** Feb 2017-Present

- Integrating large-scale image search and annotation into the product. Built services for semantic similarity search in 6 languages.
- Deployed first ML micro-service application in production on Kubernetes - using tensorflow, Drone, Docker, Consul, ELK, and Prometheus.

Data Scientist – **ondeck** July 2015-Jan 2017

- Loss forecasting and time-to-default models based on payment and behavioral data.
- Built fraud model with unit-tested scoring service running in production.
- AB testing for email campaigns and server admin for modeling on AWS.

RESEARCH PROJECTS

Research Assistant – **Columbia University** June-Aug 2015

- Experimenting with deep auto-encoders and the cost scaling algorithm for rotation invariant image representations with Prof. Tony Jebara.

Research Assistant – **CUNY Laboratory for Nano and Micro Photonics** June-Oct 2013

- Researched strong coupling and energy transfer between Surface Plasmon Polaritons and excitons on Ag thin films.
- Developed MATLAB code to simulate and fit data with Transfer Matrix Method, Coupled Oscillator Model, Lorentz-Drude Model, and surface plasmon dispersion relations.

Summer Research Fellow – **National Institute of Standards in Technology** May-Aug 2012

- Conducted spintronics research in the Electromagnetics Division, Magnetodynamics group.
- Collected and fit data in MATLAB for Ferromagnetic Resonance Measurements (FMR) on Magnetic Tunnel Junctions (MTJs).

Independent Study – **CUNY Center for Advanced Technology** Dec-May 2012

- Built laser interlock system and researched literature on metamaterials for optical cloaking.

Research Intern – **NASA Goddard Institute of Space Studies** May-Aug 2010

- Paleo-climatology and hydrology research in the Hudson Valley.

POSTERS/PRESENTATIONS

Tabanpour, B., X. Liu, V.M. Menon, Strong Coupling Between Surface Plasmon Polaritons on Ag and Excitons in Rhodamine, *CSURP Poster Session*, 2013.
http://www1.cuny.edu/mu/research/2014/01/22/c-surp-spotlight-baruch-tabanpour-city-college-of-new-york/

Tabanpour, B., E. Evarts, M. Pufall, B. Rippard, Resonance Phenomena in Magnetic Thin Films and Devices. *Summer Research Fellowship Colloquium*, 2012.

Tabanpour, B., J.E. Nichols, P.D. Isles, D.M. Peteet, Novel Method for Estimating Variations in Salinity in the Hudson Estuary Using Stable Isotopes of Leaf Waxes. *American Geophysical Union Fall Meeting,* 2010.
https://www.giss.nasa.gov/edu/nycri/research/files/2010/10-GISS-Tabanpour.ppt

Nichols, J.E., D.M. Peteet, C.M. Moy, B. Tabanpour, P.D. Isles, Links Between the Hydrological Cycle and Carbon Cycle Constrained with Stable Isotope Ratios of Leaf Waxes in an Alaskan Peatland, *American Geophysical Union Fall Meeting*, 2010.

PERSONAL PROJECTS

yarlp – yet another reinforcement learning package using trensorflow
Joint image-text embeddings
Introduction to Reinforcement Learning - solutions to Introduction to RL by Sutton & Barto
sinkhorn-knopp - implementation of Sinkhorn Knopp algorithm
climatechangebot - climate change chat-bot

TOOLS

- Daily work: Python, Tensorflow, Spark
- Infrastructure: Kubernetes, Docker, Drone, Consul/Prometheus, HDFS, S3
- Familiar: R, MATLAB, Theano, JavaScript/jQuery, HTML/CSS

AFFILIATIONS & AWARDS

Morin Foundation Engineering and Science Scholar at Macaulay Honors College, 2012
NIST Summer Undergraduate Research Fellowship, 2012
Brooklyn Technical High School Scholarship, 2009-2013
Association of the Old Crows Scholarship, 2011
Major Schultz 1925 Award for Outstanding Achievement in Engineering, 2009
Co-organizer, Cornell/Columbia Data Science Hackathon, March 2015
Secretary and Treasurer, Eta Kappa Nu Beta Pi Chapter, Honor Society of the IEEE, 2011-2013

ONLINE COURSEWORK

Deep Reinforcement Learning - UC Berkeley Fall 2017
https://github.com/btaba/homework
Probabilistic Graphical Models - Coursera Fall 2016
Convolutional Neural Networks for Visual Recognition - Stanford Spring 2015