

Holakou Rahmanian

CONTACT INFO.	San Francisco Bay Area	<i>E-mail:</i> holakou.rahmanian@gmail.com
OBJECTIVE	To tackle impactful and practical large-scale machine learning problems with learning spirit.	
EXPERTISE	Big data, multi-armed bandits, online learning, reinforcement learning.	
PROFESSIONAL & RESEARCH EXPERIENCE	Applied Scientist – <i>Amazon, Palo Alto, CA</i> • Amazon Search (formerly A9) <i>Team: Search Sciences and AI</i>	8/2020 - Present
	Applied Scientist – <i>Microsoft, Bellevue, WA</i> • Initiated projects (1) multi-armed bandit algorithms to tune parameters in 10+ dimensional parameter space given complicated reward functions, (2) counterfactual system to predict the same reward function given alternative set of parameters. <i>Team: Microsoft Advertising</i>	12/2018 - 8/2020
	Visiting Researcher – <i>Kyushu University, Fukuoka, Japan</i> • Invented boosting algorithms with soft margins on compressed data represented by Zero-Suppressed Decision Diagram inspired by path learning algorithms (publication pending).	9/2018 - 10/2018
	Research Intern – <i>Google Research, New York, NY</i> • Developed multi-class classification algorithm for model prediction system for speech-to-text tasks based on features extracted from weighted finite-state transducers. <i>Team: Speech and Language Algorithms</i>	Summer 2017
	Visiting Academic – <i>NYU Courant, New York, NY</i> • Extended well-known online path learning algorithms to NLP scenarios with non-additive losses (published in ALT 2019).	10/2016 and 1/2017
	Data Scientist Intern – <i>Microsoft, Redmond, WA</i> • Built deep learning models and LSTM-based text embedding for click prediction tasks in sponsored search context (patented and published in KDD 2017). <i>Team: Microsoft Advertising</i>	Summer 2016
	Applied Research Intern – <i>eBay Inc., New York, NY</i> • Developed and deployed a ML-based tool for identifying high quality collections. <i>Team: Merchandising and Personalization</i>	Summer 2015
	CTO Intern – <i>Brocade Communications Systems, San Jose, CA</i> • Explored and evaluated the feasibility of various research ideas of applying machine learning algorithms to networks data especially for optimizing Software-Defined Networks. <i>Team: CTO and Chief Scientist office</i>	Summer 2014
COMPUTER SKILLS	• Expert: <i>Python, Java, SQL, Matlab</i> • Intermediate: <i>C#, C/C++, R, Spark, Hadoop, HTML</i>	

PUBLICATIONS

- “**Soft Margin Optimization over Decision Diagrams**”,
with Kohei Hatano and Eiji Takimoto,
(in submission).
- “**Online Non-Additive Path Learning under Full and Partial Information**”,
with Corinna Cortes, Vitaly Kuznetsov, Mehryar Mohri, and Manfred Warmuth,
ALT 2019.
- “**Online Learning of Combinatorial Objects via Extended Formulation**”,
with David Helmbold and S.V.N. Vishwanathan,
ALT 2018.
- “**Online Dynamic Programming**”,
with Manfred K. Warmuth,
NeurIPS 2017.
- “**Online Learning of Permutations Using Extended Formulation**”,
with David Helmbold and S.V.N. Vishwanathan,
DISCML Workshop at NIPS 2017.
- “**Deep Embedding Forest: Forest-based Serving with Deep Embedding Features**”,
with Jie Zhu, Ying Shan, JC Mao, Dong Yu, and Yi Zhang,
KDD 2017

PATENTS

- **Deep Embedding Forest: Forest-based Serving with Deep Embedding Features**,
Microsoft Corporation, Redmond, WA.
with Ying Shan, JC Mao, Dong Yu, and Yi Zhang

EDUCATION

- PhD – Computer Science**, GPA 4.0 **2013 - 2018**
University of California Santa Cruz *Santa Cruz, California*
Thesis: “*Online Learning of Combinatorial Objects*”
Thesis Advisors: **S.V.N. Vishwanathan** and **Manfred K. Warmuth**
Relevant Coursework: *Machine Learning, Advanced Machine Learning, Data Mining, Classical and Bayesian Inference, Optimization Theory and Application, Information Theory, Evolutionary Game Theory, Analysis of Algorithms*
- MSc – Computer Science**, GPA 4.0 **2013 - 2015**
University of California Santa Cruz *Santa Cruz, California*
Thesis: “*Breathing Rate Prediction Using Finger-tip Sensor*”
Thesis Advisor: **Manfred K. Warmuth**
- BSc – Mathematics and Computer Science**, GPA 3.96 **2009 - 2013**
Baha’i Institute for Higher Education *Tehran, Iran*
- BSc – Computer Engineering**, GPA 3.95 **2007 - 2011**
Baha’i Institute for Higher Education *Tehran, Iran*
Thesis: “*Extending TLD to Two Cameras and Depth Estimation*”
Thesis Advisor: **Hooman Shayani**

COMMUNITY AND
VOLUNTARY
ACTIVITIES

Reviewer/External Reviewer – *various conferences*

2016-present

- SIGIR 2020, WATA 2018, COLT 2018 & 2016, NeurIPS 2018 & 2017 & 2016, ICML 2018, AISTATS 2017, JMLR 2017, IEEE TPAMI 2016.

Mentor – *Iranian Women in Computing (IranWiC)*

2019-present

- Mentored female Iranian PhD students with focus on machine learning to succeed in the job market, and ultimately, to contribute to obtain more gender-balanced environments and to empower women in tech industries.

Remote Instructor – *Baha'i Institute for Higher Education (BIHE)*

2012-2018

- Instructed the upper-division course “*Design and Analysis of Algorithms*” with 20 students on average and managed 4 TAs.

HONORS
& AWARDS

- Regents Fellowship, UC Santa Cruz – 2013
- Winner of Baha'i Institute for Higher Education ACM Programming Competition – 2010
- Runner-up of Baha'i Institute for Higher Education ACM Programming Competition – 2011
- Granted Full Tuition Scholarship 2007-2013 in Baha'i Institute for Higher Education
- Ranked 54th in Iranian University Entrance Exam (Top 0.02%) – 2007
- Silver Medalist of Iranian National Mathematics Olympiad – 2006

INVITED TALKS

- *Online Dynamic Programming*
 - Kyushu University, Fukuoka, Japan October 2018
 - Kyoto University, Kyoto, Japan October 2018
 - AIP Center, Tokyo, Japan September 2018
 - Samsung Research America, Mountain View, CA August 2018
 - Microsoft Bing Ads, Bellevue, WA June 2018
 - Amazon AWS, New York, NY May 2018
 - Google Research, New York, NY July 2017

CERTIFICATIONS

- Reinforcement Learning Specialization *Coursera* – 2020
 - Fundamentals of Reinforcement Learning
 - Sample-based Learning Methods
 - Prediction and Control with Function Approximation
 - A Complete Reinforcement Learning System (Capstone)
- Scalable Machine Learning *edX* – 2015
- Programming a Robotic Car *Udacity* – 2012
- Game Theory *Coursera* – 2012
- Algorithms: Design and Analysis, Part 1 *Coursera* – 2012
- Introduction to Logic *Coursera* – 2012
- Machine Learning *Coursera* – 2011
- Introduction to Artificial Intelligence *Udacity* – 2011