

# Baihan Lin

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**Topics** Machine Learning • Deep Nets • Neuroscience • Applied Math • Speech • Bioinformatics • Psychology • NLP • HCI  
**Research** *Note: resulting artifacts are cited here (12 Manuscripts, 9 Journals, 14 Conferences, 11 Extended abstracts, 7 Patents)*

**independent projects** Neuro Inference Lab  
Lead this research team of three. Report to my interests:  
RL/Bandits [C9, C14, E10, E7], topology/geometry  
[M14, M10, E3, C11], audio/speech [C10, C8, E10],  
VR/AR[C7], info theory [J7, C2], neuroscience [E9]

**Google [X], Moonshot** AI Scientist Resident  
Mountain View, USA, 2021.03 – 2021.07  
★ Orbital Core (Host: [S. Laszlo](#), L. Nguyen)  
Project confidential early stage moonshots on  
neuroscience, next-gen AI and biotech  
Output [P7, P6, P5, P4, P3, P2, P1]  
**Spot Bonus Award x 2**

**Microsoft Research** Visiting Researcher  
Redmond, USA, 2017.05 – 2017.08  
★ HCI; EPIC-Extended Perception, Interaction, &  
Cognition (Host: [M. Gonzalez-Franco](#))  
Project create perceptual illusion in immersive  
virtual reality with haptic feedback  
Output [J8]

**University of Washington** Research Fellow  
Seattle, USA, 2013 – 2017  
Ubiquitous Computing Lab of CSE and EE (PI: [S. Patel](#))  
Project OsteoApp – a smartphone osteoporosis  
screening app via gyroscope sensor & ML  
Output [report](#) [git](#)  
Institute for Protein Design of BioE & CSE (PI: [D. Baker](#))  
Project algorithmic self-assembly of *de novo*  
alphabetic protein design into 2d lattice array  
Output [J5]  
Vision Neuroscience Lab of Psych (PI: [J. Olavarria](#))  
Project study developmental neural plasticity of  
ocular dominance columns in visual cortex  
Output [J6, E1]

**Beijing Institute of Microbiology & Epidemiology**  
Remote collaboration, China, 2014.07 – 2017.06  
State Key Lab of Pathogen and Biosecurity (PI: Y. Teng)  
Project epidemics, genome entropy, epigenetics  
Output [J4, J3, J2, J1]

## Education

**Columbia University**  
CU: 2017.09 - 2022.12 (expected)  
Systems Biology Fellowship  
CNS Graduate Student Award

**Ph.D.**, Computational Neuroscience, 22'  
**M.Phil.**, Computational Systems Biology, 20'  
**M.A.**, Cellular Molecular Biophysics, 19'

**Georgia Institute of Technology**  
GT: 2019.09 - 2023.05 (expected)  
**M.S.**, Computer Science, 23'

**Parsons School of Design**  
PD: 2020.09 - 2022.05  
President's Scholarship  
**M.S.**, Data Visualization, 22'

**University of Washington**  
UW: 2013.09 - 2020.06  
Mary Gates Scholarship  
Dean's List Scholarship

**M.S.**, Applied Mathematics, 20'  
**B.S.**, Applied & Computational Math, 17'  
**B.A.**, Psychology (Honors), 17'

**IBM Research** Research Scientist  
Yorktown Heights, USA, 2017/18/19/20.07 – .09 (Internship)  
★ Future of AI, Computational Psychiatry (Host: [G. Cecchi](#));  
★ AI Foundations (Host: [I. Rish](#), [D. Bouneffouf](#))  
Project create AI/RL/NLP systems for computational  
phenotyping & multi-agent user modeling  
Output [M11, C13, J9, M13, M12, M6, C5, C3, C1, C6,  
E8, E7, E6, E4]

**Amazon** Applied Scientist II  
San Diego, USA, 2021.07 – 2021.09 (Internship)  
Team ML Science (Host: [D. S. Dashti](#), [P. A. Habas](#))  
Project offline and online reinforcement learning bad  
actor policies to probe system vulnerability  
Output [M1]

**Columbia University** PhD Research Fellow  
New York City, USA, 2017.09 – Present  
★ Visual Inference Lab (PI: [N. Kriegeskorte](#)) fm 2018.07  
Project infer & visualize network & representational  
dynamics & topology in brains & machines  
Output [M7, M5, M2, M3, C4, E5, C11]  
Center for Theoretical Neuroscience (PI: [N. Qian](#)) - Rotation  
Project study perception with topological representations  
and neural network models  
Output [J7, M8, C2]  
Center for Topology of Cancer Evolution (PI: [R. Rabadan](#)) - R  
Project study germline mutations w/ attention-based  
deep learning and high-dim topological inference  
Output [M14, M10, E5, E3]  
Computational Biology Group of CS (PI: [I. Pe'er](#)) - Rotation  
Project identify gait-based biomarkers in Parkinson's  
patients via wearable devices & ML  
Output [E2]

**BGI** Bioinformatics R & D Engineer  
Shenzhen, China, 2013.07 – 2013.09 (Internship)  
Personalized Genome Group, Human Health Application Lab  
(Host: H. Cao)  
Project bioinfo & review for "Autism Genome 10k" project  
Output [report](#) [git](#)  
Unit of Synthetic Biology (Host: S. Kang)  
Project synthetic yeast-based cell cycle reporting system  
Output [poster](#)

## Publications

Note: According to Google Scholar, citations: **403**, h-index: **11**, i-10 index: **11**.

### Patents

- [P7] G. Honke, [Baihan Lin](#), and A. Thubagere, 2021. U.S. Patent Application 17/574,915 (Google X-52201).
- [P6] G. Honke, [Baihan Lin](#), and A. Thubagere, 2021. U.S. Patent Application 17/574,834 (Google X-52200).
- [P5] S. Laszlo, K. Buchanan, and [Baihan Lin](#), 2021. U.S. Patent Application 17/547,107 (Google X-52143).
- [P4] S. Laszlo, L. Nguyen, and [Baihan Lin](#), 2021. U.S. Patent Application 17/550,506 (Google X-52191).
- [P3] S. Laszlo, L. Nguyen, and [Baihan Lin](#), 2021. U.S. Patent Application 17/559,641 (Google X-52192).
- [P2] S. Laszlo, L. Nguyen, [Baihan Lin](#), J. Watson, and G. Honke, 2021. U.S. Patent Application 17/557,618 (Google X-52189).
- [P1] S. Laszlo, L. Nguyen, and [Baihan Lin](#), 2021. U.S. Patent Application 17/564,536 (Google X-52190).

### Manuscripts or Preprints

- [M14] [Baihan Lin](#)\*, "Single-cell topological simplicial analysis reveals higher-order cellular complexity," *Under review in FEBS Letters*, 2022.
- [M13] [Baihan Lin](#)\*, G. Cecchi, and D. Bouneffouf, "Deep annotation of therapeutic working alliance in psychotherapy," *arXiv, Under review in Conference of the International Speech Communication Association (INTERSPEECH)*, 2022.
- [M12] [Baihan Lin](#)\*, D. Bouneffouf, G. Cecchi, and R. Tejwani, "Neural topic modeling of psychotherapy sessions," *arXiv, Under review in Conference of the International Speech Communication Association (INTERSPEECH)*, 2022.
- [M11] [Baihan Lin](#)\*, D. Bouneffouf, and G. Cecchi, "Online learning in iterated prisoner's dilemma to mimic human behavior," *arXiv, Under review in Pacific Rim International Conference on Artificial Intelligence (PRICAI)*, 2022.
- [M10] [Baihan Lin](#)\*, "Topological data analysis in time series: temporal filtration and application to single-cell genomics," *Under review in IEEE Visualization Conference (IEEE VIS)*, 2022.
- [M9] [Baihan Lin](#)\*, "Translational standards for scalable and cloud-based neuroscience research and development," *In submission to Conference on Neural Information Processing Systems (NeurIPS)*, 2022.
- [M8] [Baihan Lin](#)\*, "A note on estimating MDL in neural networks," *In submission to Neural Computation*, 2022.
- [M7] [Baihan Lin](#) and N. Kriegeskorte\*, "Adaptive geo-topological independence criterion," *arXiv*, 2018.
- [M6] D. Bouneffouf\*, O. Alkan, R. Feraud, and [Baihan Lin](#), "Multi-armed bandit with sparse and noisy feedback," *In prep*, 2022.
- [M5] [Baihan Lin](#) and N. Kriegeskorte\*, "The Topology and Geometry of Brain Representations," *In prep*, 2023.
- [M4] [Baihan Lin](#) and N. Kriegeskorte\*, "Representational dynamics of neural data: a comparative study," *In prep*, 2023.
- [M3] [Baihan Lin](#) and N. Kriegeskorte\*, "Representational geometry of low-level vision in mouse brain," *In prep*, 2023.
- [M2] J. van den Bosch, H. Schuett, T. Golan, B. Peters, [Baihan Lin](#), J. Carlin, I. Charest, J. Diedrichsen, N. Kriegeskorte, and M. Mur, "Representational similarity analysis 3.0 in Python," *In prep*, 2022.
- [M1] [Baihan Lin](#)\*, "Robust machine learning with reinforcement learning adversarial vulnerability probing," *In prep*, 2022.

### Peer-Reviewed Journals

- [J9] [Baihan Lin](#)\*, D. Bouneffouf, and G. Cecchi, "Predicting human decision making in psychological tasks with recurrent neural networks," *PLOS ONE*, 2022.
- [J8] C. Berger, [Baihan Lin](#), B. Lenggenhager, J. Lanier, and M. Gonzalez-Franco\*, "Follow your nose: extended arm reach after Pinocchio illusion in virtual reality," *Frontiers in Virtual Reality*, vol. to appear, 2022.
- [J7] [Baihan Lin](#)\*, "Regularity Normalization: Neuroscience-Inspired Unsupervised Attention across Neural Network Layers," *Entropy*, vol. 24, no. 1, 2022.
- [J6] A. Andelin, Z. Doyle, R. Laing, J. Turecek, [Baihan Lin](#), and J. Olavarria\*, "Influence of ocular dominance columns and patchy callosal connections on binocularity in lateral striate cortex: long Evans vs. albino rats," *Journal of Comparative Neurology*, vol. 528, no. 4, pp. 650–663, 2020.
- [J5] Z. Chen, M. Johnson, J. Chen, M. Bick, S. Boyken, [Baihan Lin](#), J. De Yoreo, J. Kollman, D. Baker\*, and F. DiMaio\*, "Self-assembling 2D Arrays with *de novo* protein building blocks," *Journal of the American Chemical Society*, vol. 141, no. 22, pp. 8891–8895, 2019.
- [J4] Y. Teng\*, D. Bi, G. Xie, Y. Jin, Y. Huang, [Baihan Lin](#), X. An, D. Feng, and Y. Tong, "Dynamic forecasting of Zika epidemics using Google Trends," *PLOS ONE*, vol. 12, no. 1, p. e0165085, 2017.
- [J3] Y. Teng\*, D. Bi, G. Xie, Y. Jin, Y. Huang, [Baihan Lin](#), X. An, Y. Tong, and D. Feng, "Model-informed risk assessment for Zika virus outbreaks in the Asia-Pacific regions," *Journal of Infection*, vol. 74, no. 5, pp. 484–491, 2017.
- [J2] Y. Teng\*, S. Liu, X. Guo, S. Liu, Y. Jin, T. He, D. Bi, P. Zhang, [Baihan Lin](#), X. An, *et al.*, "An integrative analysis reveals a central role of P53 activation via MDM2 in Zika virus infection induced cell death," *Frontiers in Cellular and Infection Microbiology*, vol. 7, p. 327, 2017.
- [J1] Y. Teng\*, Y. Wang, X. Zhang, W. Liu, H. Fan, H. Yao, [Baihan Lin](#), P. Zhu, *et al.*, "Systematic genome-wide screening and prediction of microRNAs in EBOV during the 2014 Ebolavirus outbreak," *Nature Scientific Reports*, vol. 5, p. 9912, 2015.

## Peer-Reviewed Conference Proceedings

- [C14] [Baihan Lin\\*](#), “Evolutionary multi-armed bandits with genetic thompson sampling,” in *Proceeding of IEEE Congress on Evolutionary Computation (IEEE CEC)*, (Padua, Italy), July 2022.
- [C13] [Baihan Lin\\*](#) and D. Bouneffouf, “Optimal epidemic control as a contextual combinatorial bandit with budget,” in *Proceeding of IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)*, (Padua, Italy), July 2022.
- [C12] [Baihan Lin\\*](#), D. Bouneffouf, and G. Cecchi, “Predicting human decision making with LSTM,” in *Proceeding of International Joint Conference on Neural Networks (IJCNN)*, (Padua, Italy), July 2022.
- [C11] [Baihan Lin\\*](#), “Geometric and topological inference for deep representations of complex networks,” in *Proceeding of The Web Conference (WWW)*, (Lyon, France), April 2022.
- [C10] [Baihan Lin\\*](#) and X. Zhang, “Speaker diarization as a fully online bandit learning problem in MiniVox,” in *Proceeding of Asian Conference on Machine Learning (ACML)*, (Bangkok, Thailand), November 2021.
- [C9] [Baihan Lin\\*](#), “Online semi-supervised learning in contextual bandits with episodic reward,” in *Proceeding of Australasian Joint Conference on Artificial Intelligence (AJCAI)*, (Canberra, Australia), November 2020.
- [C8] [Baihan Lin\\*](#) and X. Zhang, “VoicelD on the fly: a speaker recognition system that learns from scratch,” in *Proceeding of Conference of the International Speech Communication Association (INTERSPEECH)*, (Shanghai, China), October 2020.
- [C7] [Baihan Lin\\*](#), “Keep it real: a window to real reality in virtual reality,” in *Proceeding of International Joint Conference on Artificial Intelligence (IJCAI)*, (Yokohama, Japan), July 2020.
- [C6] [Baihan Lin\\*](#), D. Bouneffouf, and G. Cecchi, “Models of human behavioral agents in bandits, contextual bandits, and RL,” in *Proceeding of International Joint Conference on Artificial Intelligence (IJCAI) Workshop on Human Brain and Artificial Intelligence (HBAI)*, (Yokohama, Japan), July 2020.
- [C5] [Baihan Lin\\*](#), G. Cecchi, D. Bouneffouf, J. Reinen, and I. Rish, “A story of two streams: reinforcement learning models from human behavior and neuropsychiatry,” in *Proceeding of International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, (Auckland, New Zealand), May 2020.
- [C4] [Baihan Lin](#), M. Mur, T. Kietzmann, and N. Kriegeskorte\*, “Visualizing representational dynamics with multidimensional scaling alignment,” in *Proceeding of Conference on Cognitive Computational Neuroscience (CCN)*, (Berlin, Germany), September 2019.
- [C3] [Baihan Lin\\*](#), D. Bouneffouf, and G. Cecchi, “Split Q learning: reinforcement learning with two-stream rewards,” in *Proceeding of International Joint Conference on Artificial Intelligence (IJCAI)*, (Macao, China), August 2019.
- [C2] [Baihan Lin\\*](#), “Neural networks as model selection with incremental MDL normalization,” in *Proceeding of International Joint Conference on Artificial Intelligence (IJCAI) Workshop on Human Brain and Artificial Intelligence (HBAI)*, (Macao, China), August 2019.
- [C1] [Baihan Lin\\*](#), D. Bouneffouf, G. A. Cecchi, and I. Rish, “Contextual bandit with adaptive feature extraction,” in *Proceeding of IEEE International Conference on Data Mining (IEEE ICDM) Workshop on Data Science and Big Data Analytics (DSBDA)*, (Singapore), November 2018.

## Peer-Reviewed Extended Abstracts

- [E11] [Baihan Lin\\*](#), “Industrial insights and perspectives into translational neuroscience,” in *Annual Meeting of Society for Neuroscience (SFN) Symposium*, (San Diego, USA), September 2022.
- [E10] [Baihan Lin\\*](#), “Reinforcement learning and bandits for speech and language processing,” in *Conference of the International Speech Communication Association (INTERSPEECH) Tutorial*, (Incheon, Korea), September 2022.
- [E9] [Baihan Lin\\*](#), “Xneuro: unified neural data interface for scalable model inference,” in *Annual Meeting of Cognitive Neuroscience Society (CNS)*, (San Francisco, CA), April 2022.
- [E8] [Baihan Lin\\*](#), D. Bouneffouf, and G. Cecchi, “Online learning in iterated prisoner’s dilemma to mimic human behavior,” in *International Conference on Learning Representations (ICLR) Workshop on Gamification and Multiagent Solutions (GMS)*, (Virtual), April 2022.
- [E7] [Baihan Lin\\*](#) and D. Bouneffouf, “Reinforcement learning and bandits for computer vision,” in *IEEE Winter Conference on Applications of Computer Vision (WACV) Tutorial*, (Waikoloa, USA), January 2022.
- [E6] [Baihan Lin\\*](#), D. Bouneffouf, J. Reinen, I. Rish, and G. Cecchi, “Reinforcement learning models of human behavior: reward processing in mental disorders,” in *Conference on Neural Information Processing Systems (NeurIPS) Workshop on Biological and Artificial Reinforcement Learning (BARL)*, (Vancouver, Canada), December 2019.
- [E5] [Baihan Lin\\*](#), R. Rabadan, and N. Kriegeskorte, “What about higher-order cellular complexity? An inquiry with topological simplicial analysis,” in *Conference on Neural Information Processing Systems (NeurIPS) Workshop on Learning Meaningful Representations of Life (LMRL)*, (Vancouver, Canada), December 2019.

- [E4] [Baihan Lin\\*](#), “Modeling neurological and psychiatric disorders with reward biased Reinforcement Learning Models,” in *Technology in Psychiatry Summit (TIPS)*, (Boston, USA), October 2019.
- [E3] [Baihan Lin\\*](#), “Cliques of single-cell RNA-seq profiles reveal insights into cell ecology during development and differentiation,” in *International Conference on Intelligent Systems for Molecular Biology (ISMB)*, (Basel, Switzerland), July 2019.
- [E2] A. Bukkittu, [Baihan Lin](#), T. Vu, and I. Pe’er\*, “Parkinson’s disease digital biomarker discovery with optimized transitions and inferred Markov emissions,” in *International Conference on Research in Computational Molecular Biology (RECOMB) Conference on Regulatory & Systems Genomics*, (New York, NY), Nov 2017.
- [E1] [Baihan Lin](#), A. Andelin, and J. Olavarria\*, “Ocular dominance columns in rat : a qualitative model to analyze deprivation-induced cortical plasticity,” in *NeuroFutures Conference*, (Seattle, WA), June 2016.

## Technical Skills

### Languages:

Python, Matlab, Java, JS, Bash, R, C/C++, Perl, Html, CSS, C#

### Platforms:

G3, HPC, AWS, MPI, Android

### Tools:

Tensorflow, PyTorch, Keras, JAX, SQL/NoSQL

### Engineering:

IoT, Unity, Fabrication, EPhys, Neuroimage, SynBio

## GitHub Codes

since	at	for
2021.05	my own interest	★ BanditZoo
2020.08	ePsych @ IBM	HumanLSTM
2020.04	ePsych @ IBM	★ dilemmaRL
2020.01	my own interest	★ V2R: Virtual-to-Real Mirror
2020.01	my own interest	★ MiniVox
2019.12	my own interest	★ BerlinUCB
2019.10	NKLab @ CU	★ RSAToolbox
2019.02	my own interest	★ Unsupervised_Attention
2018.09	ePsych @ IBM	★ mentalRL
2018.06	RRLab @ CU	Sequence_Attention_Classifier
2018.04	NKLab @ CU	★ AGTIC
2018.04	RRLab @ CU	scTSA
2017.12	ePsych @ IBM	★ ABaCoDE
2017.03	UbiComp @ UW	OsteoApp
2016.11	HQLab @ UW	RNAi_CME_dynamics
2016.07	JOLab @ UW	Quanti_Patch
2016.07	HQLab @ UW	Gene_Regulatory_Network
2016.07	HQLab @ UW	DNA_polymer_dynamics
2016.04	DBLab @ UW	protein_self_assembly_scripts
2016.04	JOLab @ UW	Intan_ephys_stats
2016.04	YTLab @ BIME	Ebola_GUI_SL; Ebola_bat_model
2015.11	DBLab @ UW	bc_wc2dm; bp_solver; bp_creator
2015.10	DBLab @ UW	ABEGO_solver
2014.08	YTLab @ BIME	protein_seq_mutual_info
2014.06	JOLab @ UW	★ Patch_Processor_2.0
2014.01	CompNeuro @ UW	neuron_tuning; RC_HH_model
2013.09	HHAL @ BGI	Autism_Genome_QC_adapter
2013.08	HHAL @ BGI	Autism_Genome_QC_nactg_stats

Note: Industry-related and private repositories are not referenced here.

type	language	more	note
original	Python	<a href="#">repo</a> <a href="#">arXiv</a>	FUZZ 2022, CEC 2022
original	Python	<a href="#">repo</a> <a href="#">arXiv</a>	PLOS ONE, IJCNN 2022
original	Python/Bash	<a href="#">repo</a> <a href="#">arXiv</a>	ICLR 2022 Workshop
original	Python	<a href="#">repo</a> <a href="#">arXiv</a>	IJCAI 2020
original	Matlab	<a href="#">repo</a> <a href="#">arXiv</a> <a href="#">demo</a>	INTERSPEECH 2020
original	Matlab	<a href="#">repo</a> <a href="#">arXiv</a>	AJCAI 2020
group	Python	<a href="#">repo</a> <a href="#">arXiv</a> <a href="#">doc</a>	CCN 2019
original	Python	<a href="#">repo</a> <a href="#">arXiv</a>	HBAI 2019, Entropy 2022
original	Python/Bash	<a href="#">repo</a> <a href="#">arXiv</a> <a href="#">demo</a>	AAMAS 2020
original	Python/Bash	<a href="#">repo</a> <a href="#">doc</a>	
original	Matlab	<a href="#">repo</a> <a href="#">arXiv</a>	
original	Matlab/Java/Bash	<a href="#">repo</a> <a href="#">doc</a>	ISMB 2019
original	Matlab	<a href="#">repo</a> <a href="#">arXiv</a>	ICDMW 2018
original	Bash/Python/Matlab	<a href="#">repo</a> <a href="#">doc</a>	
original	Matlab	<a href="#">repo</a> <a href="#">doc</a>	
original	Java	<a href="#">repo</a> <a href="#">doc</a>	J. Comp. Neurol. 2020
original	R/Matlab	<a href="#">repo</a>	
original	Matlab	<a href="#">repo</a>	
original	Bash/Python/C/Perl	<a href="#">repo</a>	J. Am. Chem. Soc. 2019
original	Matlab	<a href="#">repo</a> <a href="#">doc</a>	
original	Matlab/R	<a href="#">repo1</a> <a href="#">repo2</a> <a href="#">doc</a>	
original	Java	<a href="#">repo1</a> <a href="#">repo2</a> <a href="#">repo3</a>	
original	Java/Perl	<a href="#">repo</a>	
original	Java	<a href="#">repo</a>	
original	Java	<a href="#">repo</a> <a href="#">doc</a> <a href="#">demo</a>	NeuroFutures 2016
original	Matlab	<a href="#">repo1</a> <a href="#">repo2</a> <a href="#">doc</a>	
modify	Perl	<a href="#">repo</a>	
original	Perl	<a href="#">repo</a>	

## Recognitions

### Awards:

CogNeuroSociety GSA Award;  
Google Spot Bonus Award x 2;  
iGEM-13 Gold,  
MIT-EurekaFest-11 Merit.

### Teaching:

RL & Bandits for Comp Vision,  
RL & Bandits 4 Speech & Lang,  
Stats for Behavioral Sciences,  
Neuropsychology.

### Grants:

Travel grants x 8  
(CNS-22, WACV-22,  
IJCAI-20, Interspe-20,  
MICCAI-20, IJCAI-19,  
NIPS-19, ISMB-19);  
Cloud Comput Grant;  
Comp Neuro Grant;  
PGS Research Grant;  
Parsons AMT Fund.

### Fellowships:

SysBio Fellowship,  
President's Scholarship,  
Dean's List Scholarship;  
Mary Gates Scholarship,  
Tencent Scholarship.

### Mentoring:

Sultana Yeasmin

### Reviewer & Editor:

12 Journals: PLOS ONE, Adv Complex  
Syst, IEEE Trans Knowl Data Eng,  
Comput Commun, Front AI, Entropy,  
Mathematics, Front Robot AI, Front  
Comp Neuro, Electronics, Signals,  
Algorithms;  
12 Confs: NeurIPS, ICLR, ICML,  
CVPR, ICCV, KDD, AAAI, AISTATS,  
MICCAI, Interspeech, ISMIR, CCN.

## Graduate Coursework

### Applied Mathematics

UW: Adv. Linear Algebra & Numerical Analysis (A-)  
UW: Methods for Partial Differential Equations (A-)  
UW: Probability & Stochastic Process (A-)  
UW: Mathematical Theory of Cellular Dynamics (A-)  
UW: Computational Methods for Data Analysis (A-)

### Computer Science

CU: Bandits & Reinforcement Learning (A+)  
GT: Software Development Process (A)  
GT: Adv. Artificial Intelligence (A)  
UW: High-Performance Computing (A+)  
PD: Data Structures for Web Development (A)  
PD: Modern Deductive Logic (A-)

### Theoretical Neuroscience

CU: Intro. to Theoretical Neuroscience (A)  
CU: Adv. Topics in Theoretical Neuroscience (A-)  
CU: Systems & Developmental Neurobiology (A)

### Computational & Systems Biology

UW: Mathematical Analysis in Biology & Medicine (A+)  
CU: Genomics of Gene Regulation (A)

### Art, Design & Data Visualization

PD: Typography & Visual Design (A-)  
PD: Data Visualization & Information Aesthetics (A-)  
PD: Experimental Comics (A)  
PD: XR for the Real World (A-)

## Academic Events

### Conferences

2022	SFN-22 Symposium on Industrial Insights and Perspectives into Translational Neuroscience	Chair
2022	INTERSPEECH-22 Tutorial on RL and Bandits for Speech and Language Processing	Chair
2022	WACV-22 Tutorial on Reinforcement Learning and Bandits for Computer Vision	Chair
2022	WACV-22, WWW-22, ICLR-22, CNS-22, SFN-22, FENS-22	presenter
2020 - 2021	ACML-21, INTERSPEECH-20, IJCAI-20, KDD-20, AAMAS-20, AJCAI-20	presenter
2016 - 2019	NeurIPS-19, CCN-19, IJCAI-19, ISMB-19, TIPS-19, ICDM-18, RSG-17, NeuroFutures-16	presenter
2013 - 2022	APS-22, OCIT-18, NeurIPS-17, RosettaCON-16, ICG-14, NeuroFutures-14, ICG-13	attendee

### Invited talks

2022	Psychiatry Dept @ Mount Sinai	"Deep dynamic inference of therapeutic working alliance"	NYC, USA
2021	AI & ML Innovation @ Amazon	"Bad actor simulation with online and offline RL"	San Diego, USA
2021	BRP Seminar @ Amazon	"Offline reinforcement learning in adversarial systems"	San Diego, USA
2021	X Tech Forum @ Google	"Exploratory analytics for the proteome"	Mountain View, USA
2021	Drosophilosophy Seminar @ X	"Representational geometry, topology and dynamics"	Mountain View, USA
2020	IP Seminar @ CUMC	"Adaptive geo-topological independence criterion"	NYC, USA
2020	RL Sofa Seminar @ Mila	"Unified models of human behavioral agents"	Montreal, Canada
2019	RSA 3.0 Seminar @ UW	"Representational dynamics & topology"	Toronto, Canada
2018	Neuro-AI Seminar @ IBM	"Reward-driven Attention and attention-driven reward"	NYC, USA

## References

### Industry (ML, AI, BCI, BioTech):

Dr. [Sarah Laszlo](#) (Google)  
Dr. [Garrett Honke](#) (Google)  
Dr. [Lam Nguyen](#) (Google)  
Dr. [Guillermo Cecchi](#) (IBM)  
Dr. [Djallel Bouneffouf](#) (IBM)  
Dr. [Mar Gonzalez-Franco](#) (Microsoft)

### Academia (Neuroscience & Biology):

Prof. [Niko Kriegeskorte](#) (Columbia)  
Prof. [Irina Rish](#) (Mila, UMontreal)  
  
Prof. [Jaime Olavarria](#) (UW) @ 2017  
Prof. [David Baker](#) (UW) @ 2017  
Prof. [Henry Yang](#) (BGI) @ 2017

### Academia (Computing & Math):

Prof. [Irina Rish](#) (Mila, UMontreal)  
  
Prof. [Hong Qian](#) (UW) @ 2017  
Prof. [Chris Vogl](#) (UW) @ 2017  
  
(@2017: older refs from 2017)

## Hobbies

Playing flute • Skateboarding • Woodworking • Kayaking • Aikido • Karate • Experimental cooking • Cat gazing