HARSHA GURNANI, PhD

Postdoctoral Research-Fellow, University of Washington

harshagurnani@gmail.com

WORK EXPERIENCE

2023 -	**Postdoctoral Researcher**, *University of Washington*.	Advisor: Prof Bing Brunton
2022	**Postdoctoral Researcher**, *University College London*.	Advisor: Prof R Angus Silver
2015 – 2016	**Research Internship**, *Brandeis University*.	Advisor: Prof Eve Marder, Dr Timothy O'Leary

EDUCATION

2016 - 2022	**PhD in Neuroscience,** *University College London.*
	Advisor: Prof R Angus Silver, FRS
2012 –2016	**Bachelor of Science** with Major in **Biology**, Minor in **Mathematics**
	Indian Institute of Science [First Class with Distinction; University Gold Medal]

FELLOWSHIPS AND TRAVEL AWARDS

2022 -	**UW Data Science Postdoctoral Fellowship**
2022/23 -	**Schmidt Science Fellowship** (2-year postdoctoral fellowship)
2019	Computational and Systems Neuroscience (Cosyne 2019) Travel Grant
2017	Award from DeepMind for Cajal Course in Computational Neuroscience (CCCN 2017)
2016 - 2021	**Wellcome Trust PhD Studentship**
2015	**Khorana Scholarship** for research internship [Khorana Scholars Program, DBT]
2012 - 2016	**KVPY Fellowship** [Dept. of Science and Technology, India]

PUBLICATIONS

Gurnani H*, Cayco-Gajic NA*. **Signatures of task learning in neural representations.** Curr Opinion in Neurobiology - Computational Neuroscience issue (in review - Apr 2023; invited article)

Gurnani H*, Silver RA. **Multidimensional population activity in an electrically coupled inhibitory circuit in the cerebellar cortex.** Neuron 2021; doi: 10.1016/j.neuron.2021.03.027

Lanore F*, Cayco-Gajic NA*, Gurnani H, Coyle D, Silver RA. **Cerebellar granule cell axons support high dimensional representations.** Nature Neuroscience, 2021; doi: 10.1038/s41593-021-00873-x

Lak A*, Okun M, Moss MM, Gurnani H, Farrell K, Wells MJ, Reddy CB, Kepecs A, Harris KD, Carandini M. **Dopaminergic and Prefrontal Basis of Learning from Sensory Confidence and Reward Value.** Neuron 2020; doi: 10.1016/j.neuron.2019.11.018 [*preprint* doi: 10.1101/411413]

TEACHING AND MENTORING

2021	TA for BIOL0029: Computational Biology, UCL
2020, 2021	Course instructor and content creator for Data Science and Machine Learning in Python, UCL
2020, 2021	TA for NEUR0019: Neuroinformatics course (methods in quantitative neurophysiology), UCL
2018, 2019	TA at LIDO-PhD SysMIC course: Systems Training in Maths, Informatics, Statistics and Computational Biology, UCL
2016	TA at Computational Approaches to Memory and Plasticity (CAMP), Bangalore
2016	TA for MB208: Theoretical and Computational Neuroscience (IISC, Bangalore)
2023	Mentor for PhD rotation project (UW)
2019-2021	Mentor at ReachOut, UK (working with grade 5/6 students)
2020-21	Mentor for 3-month PhD rotation project (UCL)
2019-20	Mentor-supervisor for BSc. thesis project (UCL)

SELECTED CONFERENCE PRESENTATIONS

Project:	**Transformation of cortico-pontine inputs during associative learning**	
	Harsha Gurnani, RA Silver*	
Feb 2022	5th France Cerebellar Meeting	[Invited Talk]

Project:	**Cerebellar-like structure improves feedback-learning in recurrent neural networks**	
	Alessandro Barri, **Harsha Gurnani**, *RA Silver.*	
Feb 2021	Computational and System Neuroscience conference (Cosyne)	[Poster]

Project:	**Dynamics of electrically coupled inhibitory networks**	
	Harsha Gurnani, N Alex Cayco Gajic, RA Silver.*	
Feb 2021	Computational and System Neuroscience conference (Cosyne)	[Poster]
Oct 2019	Janelia Junior Scientist Workshop on Theoretical Neuroscience	[Talk]

Project:	**Coordination of inhibitory Golgi Population Activity in the Cerebellar Cortex**	
	Harsha Gurnani, RA Silver.*	
July 2019	Gordon research Seminar & Conference (Cerebellum)	[Talk]
Mar 2019	Computational and Systems Neuroscience conference (Cosyne)	[Poster]
Jan 2019	3rd France Cerebellar Meeting	[Poster]
Oct 2018	Champalimaud Research Symposium	[Poster]

Project:	**Dopaminergic and frontal signals for reward learning in perceptual decision-making**	
	A Lak, M Okun, M Moss, **Harsha Gurnani**, *MJ Wells, CB Reddy, KD Harris, M Carandini.*	
Nov 2018	Neuroscience 2018 (SfN)	[Poster]
Nov 2017	Neuroscience 2017 (SfN)	[Poster]

Project:	**Maintaining neuronal properties during growth with local and global homeostatic regulation**	
	Harsha Gurnani, T O' Leary, E Marder*.	
Nov 2016	Neuroscience 2016 (SfN)	[Poster]
Oct 2015	Dynamic Neural Networks: STG Meeting 2015	[Talk]

WORKSHOPS/ SUMMER SCHOOLS

Oct 2019	Janelia Junior Scientist Workshop on Theoretical Neuroscience
May 2018	Optical Imaging and Electrophysiological Methods in Neuroscience; Paris.
Aug 2017	Cajal Course in Computational Neuroscience; Lisbon.
July 2014	Computational Approaches to Memory and Plasticity; Bangalore
Dec 2013	Bangalore Cognition Workshop.

VOLUNTEERING

2022	Organizing committee, UCL NeuroAI
2019-21	Organizing committee, UCL PhDs in Systems Neuroscience
2018-19	PhD student committee, NPP, UCL
2016-18	Winter volunteer with CRISIS UK