

# Faisal Baqai

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## EDUCATION

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### Carnegie Mellon University

*Ph.D. student in Neural Computation*

Advisor: Shushruth Shushruth

**Pittsburgh, PA**

*August 2017 - Present*

### Carnegie Mellon University

*Master of Science in Computational Biology*

Research Advisor: Steve Chase

**Pittsburgh, PA**

*August 2014 - May 2016*

### Brown University

*Bachelor of Science, Neuroscience and Mathematical Economics*

**Providence, RI**

*September 2007 - May 2011*

## EXPERIENCE

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### Graduate Research

*Shushruth Lab, PI: Shushruth Shushruth*

**Pittsburgh, PA**

*August 2023 - Present*

- Topic: Modeling non-human primate behavior in tasks of time estimation and abstract decision-making.
- Skills: Computational and theoretical methods for statistical models (MATLAB), training primates for behavioral experiments

### Graduate Research

*Cohen Lab, PI: Marlene Cohen*

**Pittsburgh, PA**

*August 2017 - October 2019*

- Topic: Modeling non-human primate behavior in a continuous decision-making task in order to constrain the space of neural mechanisms
- Skills: Computational and theoretical methods for stochastic differential equations (MATLAB), training primates for behavioral experiments

### Research Associate

*MiCRONS, PI: Tai Sing Lee*

**Pittsburgh, PA**

*June 2016 - August 2017*

- Topic: Geometry of the neural code in mouse primary visual cortex
- Skills: dimensionality reduction and supervised machine learning (MATLAB)

### Masters Research

*Chase Lab, PI: Steven Chase*

**Pittsburgh, PA**

*December 2015 - April 2016*

- Topic: How an artificial neural network adapts to perturbation during a brain-computer interface task
- Skills: Computational modelling with artificial neural networks, Hebbian learning (MATLAB)

### EEG Lab Tech Assistant

*Beth Israel Deaconess Medical Center*

**Boston, MA**

*February 2012 - 2013*

- Accomplished hands-on tasks with patients and hardware

### Research Assistant

*Laboratory for Restorative Neurotechnology, PI: John Donoghue*

**Providence, RI**

*April 2010 - April 2011*

- Topic: Nonstationarities in neural signals and how they affect brain computer interfaces
- Skills: Signal processing and wavelet decomposition for geometric analysis (MATLAB)

## PUBLICATIONS AND PRESENTATIONS

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### Low rank mechanisms underlying flexible visual representations

- Douglas A. Ruff, Cheng Xue, Lily E. Kramer, **Faisal Baqai**, and Marlene R. Cohen, PNAS, 2020  
<https://doi.org/10.1073/pnas.2005797117>

## Geometry of V1's response to non-Cartesian versus Cartesian Stimuli

- CoSyNe 2017 Poster
- Society for Neuroscience Annual Meeting 2017 Poster

## AWARDS AND ACHIEVEMENTS

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- Richard King Mellon Presidential Fellowships in Life Sciences August 2017-May 2019
- Computational Biology Department Academic Achievement Fellowships August 2014- May 2016
- Sigma Xi (International Scientific Research Honors Society) April 2011
- Omicron Delta Epsilon (International Economics Honors Society) January 2010
- Henry Parker Manning Prize 5th Place April 2010

## TEACHING

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- Computational Neuroscience Teaching Assistant  
*University of Pittsburgh, Department of Mathematics* Spring 2019
- Honors Linear Algebra Grader  
*Brown University, Department of Mathematics* 2008-2009

## SERVICE

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- Center for the Neural Basis of Cognition Colloquium Committee 2018-2019
- Carnegie Mellon Graduate Student Association 2018-2019  
*Program in Neural Computation department representative*