# Aditya Upadhyayula

Center for Mind and Brain
University of California - Davis, USA

Immigration status : OPT, F-1 visa

https://adibuoy23.github.io/
+1 919 931 8018
aditya.usa8@gmail.com
github.com/Adibuoy23


## Education

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| 2021 | **Johns Hopkins University, USA**, PhD, Psychological & Brain Sciences |
| 2018 | **Johns Hopkins University, USA**,M.A, Psychological & Brain Sciences |
| 2016 | **North Carolina State University, USA**, M.S, Electrical & Computer Engineering |
| 2013 | **Birla Institute of Technology & Science - Hyderabad, India**, M.Sc.(Hons.), Physics |
| 2013 | **Birla Institute of Technology & Science - Hyderabad, India**, B.E.(Hons.), Electronics & Communications Engineering |

## Academic Appointments

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| Present | **Post Doctoral Scholar, Center for Mind & Brain, University of California, Davis, CA** |
| July 2021 | Investigating how scene semantics informs eye movements in naturalistic images and videos using eye tracking, computational modelling and behavioral analyses |
| | Mentor : John Henderson, PhD |

## Honors and Awards

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| 2021 | G. Stanley Hall Scholar Award - Awarded to a student who has demonstrated exceptional scholarly progress in dissertation research ($500) |
| 2019 | Travel Award, Object Perception Attention and Memory conference ($250) |
| 2019 | Departmental Collaborative Research Grant Award ($1000) |
| 2016 | Robert S. Waldrop Graduate Student Fellowship |
| 2021 | |

## Skills

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| Programming | **Python**, **Matlab**, **R**, **C**, Javascript, HTML, Java |
| Methodology | **Computational Cognitive Science**, **Eye Tracking**, **Psychophysics**, EEG processing |
| OS | MacOS, Linux, Windows |
| Software | **PyTroch**, **Psychopy**, **Psychtoolbox**, **Plotly**, Tensorflow, Experiment Builder, EEGLAB, E, NLTK, spaCy |

## Teaching

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|---|---|
| Spring 2020 | Instructor - Cognitive Neuroscience, Johns Hopkins University |
| Fall 2019 | Instructor - Research Methods, Johns Hopkins University |
| Spring 2019 | Instructor - Design & Experimental Analysis, Johns Hopkins University |
| Fall 2018 | Teaching Assistant - Sensation & Perception, Johns Hopkins University |
| Spring 2018 | Teaching Assistant - Introduction to Cognitive Psychology, Johns Hopkins University |
| Fall 2017 | Teaching Assistant - Introduction to Psychology, Johns Hopkins University |

## Research Experience

**Present** — **Visiting Researcher, Tilburg University, Netherlands**
**August 2019** — Developing computational methods using psycholinguistic theories to understand narrative comprehension in comics

Mentor : Neil Cohn, PhD

**May 2021** — **Graduate Researcher, Johns Hopkins University, Baltimore, MD**
**August 2016** — Developed computational methods, used psychophysics tools & eye tracking to understand performance limits in visual cognition & perception

Advisor : Jonathan Flombaum, PhD

**May 2016** — **Graduate Researcher, North Carolina University, Raleigh, NC**
**January 2015** — Developed computational methods using signal & image processing to remove respiratory artifacts in MRI scans

Mentor : David Lalush, PhD

**May 2016** — **Graduate Research Assistant, University of North Carolina, Chapel Hill, NC**
**January 2016** — Built an EEG processing pipeline & analyzed for frontal asymmetries in the resting state EEG data of patients with Major Depressive Disorder

Mentor : Flavio Frohlich, PhD

**December 2014** — **Research Assistant, Indian Institute of Science, Bengaluru, India**
**August 2014** — Programmed & Assisted in building a robotic arm to study motor control of eye-hand coordination in humans

Mentor : Aditya Murthy, PhD

**July 2014** — **Research Assistant, Indian Institute of Science, Bengaluru, India**
**January 2013** — Developed prototypes & wrote algorithms for an autonomous Indoor Positioning System that can be used for navigating first responders during disaster management

Mentor : K.V.S. Hari, PhD

## Publications (Manuscripts in prep & under review)

**2022** — **Upadhyayula A.**., & John M Henderson. (submitted for review) Predictions about future facilitate spatiotemporal jump detections during continuous film viewing

**2022** — **Upadhyayula A.**., Alan Lu & John M Henderson. (In prep) Meaning maps predict reaction time in change blindness paradigm

**2022** — **Upadhyayula A.**., & John M Henderson. (In prep). Event structure affects impaired detection of spatiotemporal disruptions during film viewing

**2022** — **Upadhyayula A.**., & Neil Cohn. (Submitted for review). A computational investigation of hierarchy in visual narratives. [Watch the talk]

**2022** — **Upadhyayula A.**., Ian B. Phillips & Flombaum. J.I. (Revision submitted for review). Space and time dissociate in the construction of a Visual Moment [Watch the talk]

**2022** — **Upadhyayula A.**., Ian B. Phillips & Flombaum. J.I. (In prep). Subjective expansion of Time happens in our immediate memory, but not perceptual experience [See the poster]

**2022** — **Upadhyayula A.**., Ian B. Phillips & Flombaum. J.I. (In prep). Before, Now & After. A review on temporal properties of perception

**2020** — **Upadhyayula A.**., & Flombaum. J.I. (2020). "A model that adopts human fixations explains individual differences in multiple object tracking." Cognition (2020) : 104418.g [link]

## Conferences

2022 **Upadhyayula A.** ,& John M. Henderson. Time marches on : Impaired detection of spatiotemporal discontinuities during film viewing, poster presented at VSS 2022.

2020 **Upadhyayula A.** ,& Neil Cohn. Hierarchical Structure in Processing Visual Narratives : A computational investigation, talk presented part of symposium at CogSci. 2020

2020 **Upadhyayula A.**, Ian Phillips & Flombaum. J.I. Space and Time Dissociate in the construction of the Visual Now, talk presented at V-VSS 2020

2020 Ian Phillips, **Upadhyayula A.** & Flombaum. J.I. Tachyspychia - subjective expansion of time - happens in immediate memory, and not in perceptual experience, poster presented at V-VSS 2020

2019 **Upadhyayula A.**, & Jonathan Flombaum, "Distortions of time perception", presented at Mid Atlantic Memory and Attention conference

2019 **Upadhyayula, A.**, & Jonathan Flombaum, Two distortions of perceived space and time, presented at Object Perception Attention & Memory (OPAM)

2019 **Upadhyayula A.**, & Jonathan Flombaum, The Visual Now across the visual field, presented at Captial Area Cognition Action & Perception

2018 **Upadhyayula A.**, & Jonathan Flombaum, "Object size affects multiple object tracking performance (but not via frequency of close encounters)." Journal of Vision 18.10 (2018) : 1020-1020

## Selected Invited Talks

2021 Yale University, CT - Cognitive & Neural Computation Lab (PI : Ilker Yildirim)

2021 University of California, Davis, CA - Visual Cognition Group (PI : John Henderson)

2021 New York University - Ma Lab (PI : Weiji Ma)

2020 Tilburg University, Netherlands - Groningen-Tilburg joint workshop on Pictorial narrative comprehension

2020 University of California, San Diego, CA - Cognitive tools lab (PI : Judith Fan)

2019 Villanova University, PA - Mid Atlantic meeting on Memory & Action

2018 Georgetown University, DC - Captiol Area conference on Cognition, Action & Perception

2018 Johns Hopkins University - Seminar on Computational Psycholinguistics (PI : Tal Linzen)

## References


Jonathan Flombaum
*Associate Professor*
Johns Hopkins University
flombaum@jhu.edu

John Henderson
*Professor*
UC Davis
johnhenderson@ucdavis.edu

Neil Cohn
*Associate Professor*
Tilburg University
neilcohn@emaki.net

Ian Phillips
*Professor*
Johns Hopkins University
ianbphillips@jhu.edu