KevinDeSimone

neuroscience, vision science, brain imaging

contact

3 Washington Sq Village 12K
New York, NY 10012
(917) 348-7678
kevindesimone@gmail.com
desimone@nyu.edu

programming

♥ Python
MATLAB R Django SQL bash
perl CSS HTML JavaScript
CUDA C++ Cython pandas

software

github.com/kdesimone
kdesimone.github.io/popeye

research interests

open-source software
receptive field modeling
behavioral modeling
human visual system
functional brain imaging

research skills

time-series modeling
classification
regression
clustering
dimensionality reduction
model selection

personal interests

softball dodgeball rugby
cycling football cooking
camping portaging sci-fi
fantasy crosswords basenjis

education

2012–2016 **Doctor** of Philosophy, Psychology — York University–Toronto,ON

Non-invasive segmentation of the human lateral geniculate nucleus.
This thesis revolved around developing a novel quantitative spatiotemporal model of the response properties of populations of neurons in the human brain as measured with functional brain imaging techniques.

2010–2012 **Masters** of Art, Psychology — York University–Toronto, ON

Resolving the projection of a moving stimulus on the human cortical surface.
This thesis involved the implementation of population receptive field modeling for mapping the functional organization of human visual cortex using functional brain imaging techniques.

1999–2003 **Bachelor** of Arts, Neuroscience — Skidmore College–Saratoga Springs, NY

Specialization in vision research.

experience

2016 - Now **New York University** — New York, NY

Post-doctoral fellow

- Investigating attention and memory
- Combining behavioral modeling and neuroimaging techniques

2007–2010 **Columbia University** — New York, NY

Research Technician

Developed analysis pipeline for a clinical brain imaging research center.

- Developed software to analyze multispectral brain imaging data
- Automated the workflow in a high-throughput brain imaging lab
- Created web applications for evaluating brain imaging data

2008–2010 **Investio** — New York, NY

Data Scientist

Lead data scientist at a consumer financial services startup company.

- Developed an automated technical analysis trading system
- Implemented proprietary technical analysis algorithms
- Created forward-testing platform for evaluating algorithm performance

2005–2007 **New York University** — New York, NY

Research Assistant

Conducted brain imaging experiments investigating the human vision and memory.

- Designed and conducted brain imaging experiments
- Investigated the neurophysiological underpinnings of attention and memory

2003–2005 **Princeton University** — Princeton, NJ

Research Assistant

Conducted brain imaging experiments investigating the primate visual system.

- Behavioral training in non-human primates
- Developed scanning methods for non-human primates

awards

2013–2015 **CREATE Training Grant** Centre for Vision Research, York University
Recipient of an NSERC Collaborative Research Experience And Training Experience grant.

2014 **Canada Arts Council Grant** In partnership with Keith Schneider and Matthew Sloly
Recipient of a grant to develop a novel real-time fMRI biofeedback system for presenting a participant with a real-time representation of their own brain activity.

2013 **Marian Regan Prize** Centre for Vision Research, York University
Recipient of annual Marian Regan prize awarded for the best Masters thesis in vision science.

2013 **Faculty of Graduate Studies Masters Thesis Prize in Psychology** York University
Recipient of an annual award given to the best Masters thesis in the Department of Psychology.

communication skills

Talks

2015 **Human Brain Mapping Annual Meeting** Honolulu, HI
Invited to present *popeye*, the open-source population receptive field estimation tool written in Python that I created.

2015 **HELIX Summer Science Institute** Toronto, ON
Instructed a five day course, *Fundamentals of Neuroscience*, at a summer science camp for gifted students grades 11 and 12.

2013 **Society for Neuroscience Annual Meeting** San Diego, CA
Presented the results of my work investigating the response properties of the human subcortical visual system using functional brain imaging techniques and receptive field modeling.

Selected Posters

2015 **Society for Neuroscience Annual Meeting** Chicago, IL
Estimating the response properties of the human lateral geniculate nucleus using a spatiotemporal population receptive field model.

2015 **Human Brain Mapping Annual Meeting** Honolulu, HI
Using visual flicker to modulate the response of subcortical nuclei.

publications

DeSimone K, Schneider KA (2016) Intrinsic and model-based functional segmentation of the human lateral geniculate nucleus. NeuroImage, in review.

DeSimone K, Rokem A, Schneider KA (2016) popeye: a population receptive field estimation tool. Journal of Open Source Software 1(8). doi:10.21105/joss.00103.

DeSimone K, Viviano JD, Schneider KA (2015) Population receptive field estimation reveals new maps in human subcortex. Journal of Neuroscience 35: 9836-9847. doi:10.1523/jneurosci.3840-14.2015.

Kelly KR, **DeSimone K**, Gallie BL, Steeves JKE (2014) Increased cortical surface area and gyrification following long-term survival from early monocular enucleation. Clinical NeuroImaging 7: 297-305. doi:10.1016/j.nicl.2014.11.020

Kastner S, **DeSimone K**, Konen C, Szczepanski S, Weiner K, Schneider K (2007) Topographic maps in human frontal cortex revealed in memory-guided saccade and spatial working memory tasks. Journal of Neurophysiology 97: 3494-3507. doi:10.1152/jn.00010.2007.

Pinsk MA, **DeSimone K**, Moore T, Gross CG, Kastner S (2005) Representations of faces and body parts in macaque temporal cortex: an fMRI study. PNAS 102: 6997-7001. doi:10.1073/pnas.050260510.