Karin Cox ‖ Curriculum Vitae

Pittsburgh, PA, USA‖ kmc51@pitt.edu ‖ https://github.com/kc13 ‖ https://kc13.github.io

EDUCATION

Ph.D.: Computer Science
April 2024 ‖ University of Pittsburgh, Pittsburgh, PA

Ph.D.: Cognitive Psychology
December 2011 ‖ University of Pittsburgh, Pittsburgh, PA

Certificate: Cognitive Neuroscience
December 2011 ‖ University of Pittsburgh, Pittsburgh, PA

B.A.: Psychology and Spanish
May 2003 ‖ Macalester College, St. Paul, MN

WORK EXPERIENCE

Postdoctoral Scholar: Lab of Dr. Robert Turner
2024-present ‖ Department of Neurobiology, University of Pittsburgh, Pittsburgh, PA

Graduate Student Researcher: Lab of Dr. Robert Turner
2020-present ‖ Department of Neurobiology, University of Pittsburgh, Pittsburgh, PA

Graduate Teaching Assistant
2016-2020 ‖ Department of Computer Science, University of Pittsburgh, Pittsburgh, PA

Research Principal: Geriatric Psychiatry Neuroimaging Lab (PI: Dr. Howard Aizenstein)
2014-2015 ‖ Department of Psychiatry, University of Pittsburgh Medical Center, Pittsburgh, PA

Postdoctoral Researcher: Lab of Dr. Joseph Kable
2011-2014 ‖ Department of Psychology, University of Pennsylvania, Philadelphia, PA

Graduate Student Researcher: Lab of Dr. Julie Fiez
2004-2011 ‖ Department of Psychology, University of Pittsburgh, Pittsburgh, PA

Lab Coordinator: Pediatric Autonomic Lab (PI: Dr. Elizabeth Gilles)
2003-2004 ‖ Center for Neurobehavioral Development, University of Minnesota, Minneapolis, MN

Research Assistant: Reading and Language Investigations Lab (PI: Dr. Brooke Lea)
2002-2003 ‖ Department of Psychology, Macalester College, St. Paul, MN

PUBLICATIONS

Peer-Reviewed Publications

Kase D, Zimnik AJ, Han Y, Harsch DR, Bacha S, Cox KM, Bostan AC, Richardson RM, Turner RS. Movement-related activity in the internal globus pallidus of the parkinsonian macaque. Journal of Neurophysiology. 2025 Aug 1;134(2):741-65.

Cox KM, Kase D, Znati T, Turner RS.
Detecting rhythmic spiking through the power spectra of point process model residuals.
Journal of Neural Engineering. 2024;21(4):046041.

Cox KM, Fiez JA. Abstract inference of unchosen option values.
European Journal of Neuroscience. 2020;51(3):909-21.

Cox KM, Kable JW. BOLD subjective value signals exhibit robust range adaptation.
Journal of Neuroscience. 2014;34(49):16533-43.

Cox KM, Aizenstein HJ, Fiez JA. Striatal outcome processing in healthy aging.

Cognitive, Affective, & Behavioral Neuroscience. 2008;8:304-17.

PEER-REVIEWED CONFERENCE ABSTRACTS

Cox KM, Kase, D, Turner RS.
Detecting rhythmic spiking through the power spectra of point process model residuals.
COSYNE Abstracts 2023.

TEACHING EXPERIENCE

All entries refer to teaching assistant positions held at the University of Pittsburgh:

CS 0449: Introduction to Systems Software	Summer 2020
CS 1652: Data Communication and Computer Networks	Summer 2019, Fall 2019
CS 1567: Programming and System Design on a Mobile Robot Platform	Summer 2019
CS 2520: Wide Area Networks	Spring 2019
CS 2731: Introduction to Natural Language Processing	Spring 2019
CS 1675: Introduction to Machine Learning	Fall 2018
CS 1501: Algorithm Implementation	Spring 2017, Fall 2017, Fall 2019
CS 1699: Introduction to Information Security Policy and Compliance	Spring 2017
CS 0447: Computer Organization and Assembly Language	Fall 2016, Spring 2018, Summer 2018, Summer 2020
CS 0401: Intermediate Programming Using Java	Summer 2016, Spring 2020
CS 0445: Data Structures	Spring 2016
PSY 0505: Introduction to Biopsychology	Spring 2011
PSY 0310: Developmental Psychology	Fall 2010
PSY 0420: Laboratory in Cognitive Psychology	Spring 2009

TECHNICAL EXPERIENCE

Programming / Scripting:

Most experience:	MATLAB, Java
Substantial experience:	Python, C/C++
Moderate experience:	R, shell (.bash, .csh), assembly (MIPS)
Basic experience:	git, Android

Specific Application Areas:

Neural data analysis and modeling:	Spike sorting/curation tools: (Kilosort, Phy, Offline Sorter, MountainSort)
	fMRI analysis software (AFNI, FSL, AIR)
	Other imaging analysis tools (ITK-SNAP, HistoloZee)
	Dynamical systems modeling (XPP)
Video analysis:	DeepLabCut, Anipose, OpenCV, YOLO
Communication:	Socket programming (TCP/UDP, Bluetooth)
Embedded/Mobile:	Raspberry Pi, Arduino, Android phones
Nonhuman primate (NHP) lab:	Electrophysiology (ongoing training: microcraniotomy, mapping, Neuropixels)
	EMG (percutaneous, surface)
	Rig construction and wiring, DAQ boards
	Basic NHP handling

PROFESSIONAL MEMBERSHIPS

Society for Industrial and Applied Mathematics	2020-2024
Society for Neuroscience	2005-2015
Society for Neuroeconomics	2012
Cognitive Neuroscience Society	2005-2012

AWARDS AND HONORS

Postdoctoral Trainee, Neurobiology of Neurological Disease (NINDS T32 NS086749)	May 2024-present
Andrew Mellon Predoctoral Fellowship	2008-2009
NSF IGERT Fellowship	September-October 2006
University of Pittsburgh / Faculty of Arts & Sciences Fellowship	2004-2005

Phi Beta Kappa	2003
National Merit Scholarship	1999-2003

PROFESSIONAL SERVICE ACTIVITIES

Public Outreach

"Open-source code for detecting rhythmic spiking using power spectra of point process model residuals." (2024, Sept. 27). Discover ASAP series, Aligning Science Across Parkinson's.
`https://youtu.be/r0EIuGzbUWw?si=oXT_X7WvvLTiUp2W`

Ad hoc reviewing:

Cerebral Cortex	Human Brain Mapping
Cognitive, Affective, & Behavioral Neuroscience	Neuroimage
Journal of Cognitive Neuroscience	PLOS One
Journal of Neuroscience	Social, Cognitive, & Affective Neuroscience
Journal of Neurophysiology	

Training Program Service:

Colloquium Committee, Center for the Neural Basis of Cognition	2009-2010
Cognitive Psychology Program Student Representative, University of Pittsburgh	2006-2007
Cognitive Psychology Brown Bag Series Coordinator, University of Pittsburgh	2005-2006