Karin Cox ‖ Curriculum Vitae

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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

EMPLOYMENT

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.

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

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

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