

CURRICULUM VITAE

Flavia Filimon

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EDUCATION

Ph.D., Cognitive Science *University of California, San Diego, USA (2008)*
M.S., Cognitive Science *University of California, San Diego, USA (2004)*
**B.A. (Honours, 1st class),
Psychology and French** *University of Auckland, New Zealand (2001)*

CONTINUING EDUCATION

MicroMasters in Data Science *University of California San DiegoX (2020 - 2021)*

ACADEMIC POSITIONS

Research Fellow *Center for Mind/Brain Sciences, University of Trento, Italy*
(Dec. 2021 - present)

Visiting Lecturer *School of Psychology, Faculty of Health and Medical Sciences, University of Surrey, U.K.*
(Oct. 2017 – June 2020)

Research Scientist *Max Planck Institute for Human Development, Berlin, Germany*
(September 1. 2016 - Oct. 2017)

Research Fellow *Max Planck Institute for Human Development, Berlin, Germany; (co-funded by Berlin School of Mind & Brain, Humboldt University, Berlin, Germany from June 1. 2013 - June 1. 2015)*
(June 1. 2013 - August 31. 2016)

Visiting Research Fellow *Division of Psychology and Language Sciences University College London, UK*
(June 15. 2012 - June 1. 2013)

Research Scientist *Department of Education and Psychology, Freie Universität Berlin, Berlin Germany (lab relocated from Max Planck Institute)*
(Nov. 1. 2010 - June 15. 2012)

Postdoctoral Scholar *Max Planck Institute for Human Development Berlin, Germany*
(Nov. 1. 2008 - Oct 31. 2010)

AWARDS, HONORS, AND FELLOWSHIPS

- 2013-2015 Postdoctoral Fellowship, Berlin School of Mind & Brain, Humboldt University Berlin, Germany (competitively awarded; 2 years).
- 2007-2008 NSF IGERT *Vision and Learning in Humans and Machines* Fellowship University of California, San Diego (full tuition; 1 year).
- 2007 UCLA Advanced Neuroimaging Summer School Fellow (competitively awarded; paid room and board; 2 weeks).
- 2002-2007 Graduate Student Researcher, UCSD (with Dr. Martin I. Sereno).
- 2004-2007 Four-time Recipient of Teaching Excellence Award (highest T.A. award) University of California, San Diego.
- 2003 Recipient of Superior Teaching Award (second-highest T.A. award) University of California, San Diego.
- 2001 University of Auckland, N.Z., Masters Scholarship (declined by me).
- 2000-2001 Summer Research Scholarship, Research School of Biological Sciences, Australian National University, Canberra, Australia (3 months).
- 1999-2000 University of Auckland, N.Z., Honours Scholarship (full tuition, 1 year).
- 1999 Senior Prize in Psychology (University of Auckland, New Zealand).
- 1999 Senior Scholarship in French (University of Auckland, New Zealand).
- 1997-1999 University of Auckland Alumni Association Undergraduate Scholarship (full tuition for Bachelor degree, 3 years).
- 1996 1st prize in New Zealand Alliance Française National French Competition (national winner). (1 month in Paris, France; room & board paid).

PUBLICATIONS (citations = Google Scholar citations, January 2022)

- Filimon, F**; Nelson, JD (joint 1st author); Sejnowski, TJ; Sereno, MI; Cottrell, GW (2020). The ventral striatum dissociates information expectation, reward anticipation, and reward receipt. *PNAS* June 11, 2020 <https://doi.org/10.1073/pnas.1911778117>. (**12 citations**)
- Wu, CM; Meder, B; **Filimon, F**; Nelson, JD (2017). Asking better questions: How presentation formats influence information search. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 43(8):1274-1297. doi: 10.1037/xlm0000374. (**27 citations**)
- Filimon, F** (2015). Are all spatial reference frames egocentric? Reinterpreting evidence for allocentric, object-centered, or world-centered reference frames. *Frontiers in Human Neuroscience* 9:648, 1-21. doi: 10.3389/fnhum.2015.00648. (**84 citations**)
- Filimon, F**; Rieth, CA (joint 1st author); Sereno, MI; Cottrell, GW (2014). Observed, Executed, and Imagined Action Representations can be decoded from Ventral and Dorsal Areas. *Cerebral Cortex* 25(9):3144-3158. (**83 citations**)
- Filimon, F**; Philiastides, MG; Nelson, JD; Kloosterman, NA; Heekeren, HR (2013). How embodied is perceptual decision making? Evidence for separate processing of perceptual and motor decisions. *Journal of Neuroscience* 33(5):2121-2136. (**94 citations**)

Filimon, F (2010). Human Cortical Control of Hand Movements: Parietofrontal Networks for Reaching, Grasping, and Pointing. *The Neuroscientist* 16(4), 388-407. **(245 citations)**

Filimon, F; Nelson, JD; Huang, R-S; Sereno, MI (2009). Multiple parietal reach regions in humans: cortical representations for visual and proprioceptive feedback during online reaching. *Journal of Neuroscience*, 29 (9):2961-2971. **(261 citations)**

Filimon, F (2008). Multisensory and Sensorimotor Representations for Action in Human Posterior Parietal Cortex investigated with functional MRI. Doctoral Dissertation. University of California, San Diego.

Filimon, F; Nelson, JD; Hagler, DJ, Sereno, MI (2007). Human cortical representations for reaching: Mirror neurons for execution, observation, and imagery. *NeuroImage* 37, 1315-1328. **(583 citations)**

Filimon, F; Nelson, JD; Sereno, MI (2006). Egocentric and allocentric reference frames for eye movements-an fMRI study. *Journal of Vision* 6(6), 979-979.

Bryant, D; **Filimon, F**, Gray, RD (2005). Untangling our past: Languages, trees, splits and networks (book chapter). In: *The evolution of cultural diversity*, pp. 77-93. Ruth Mace, Clare J. Holden and Stephen Shennan (eds.), UCL press. **(160 citations)**

(Submitted & In preparation):

Filimon, F; Nelson, JD; Kothiyal, A; Lennan, C; Gigerenzer, G (in preparation). Distinct neural substrates underlie reward-based decisions in visual, auditory, and cognitive probabilistic environments learned via experience: an event-related fMRI study.

Filimon, F; Nelson, JD; Schiebener, J; Brand, M; Volz, K (in preparation). Probabilistic perceptual categorization decisions rely on distinct neural activations when probabilities are learned from experience as opposed to description.

CONFERENCE TALKS & POSTERS

Filimon, F (2020, July). Ventral striatum dissociates information expectation, reward anticipation, and reward receipt (Talk). "From Efficient Coding to Information Gain: Information-Theoretic Principles in Models of Human Decision Making" Workshop, 42nd Annual Virtual Meeting of the Cognitive Science Society.

Filimon, F (2019, March). Does the brain use allocentric spatial reference frames? (Talk). "What are your coordinates?" Workshop, Computational and Systems Neuroscience (COSYNE) 2019, Cascais Portugal.

Filimon, F (2016, July). Action, Perception, and Decision Making: when are cognitive and perceptual processes 'embodied' in motor circuits? (Talk). Japan Neuroscience Society, Yokohama, Japan. Program No. S2-E-3-4.

Filimon, F; Kothiyal, A; Nelson, JD; Gigerenzer, G (2015, Oct). Distinct neural substrates underlie reward-based decisions in visual, auditory, and cognitive probabilistic environments learned via experience: an event-related fMRI study. (Poster). Society for Neuroscience annual meeting, Chicago, Illinois.

- Nelson, JD; **Filimon, F**; Schiebener, J; Brand, M; Volz, K (2015, Oct). Probabilistic classification decisions in the perceptual domain rely on distinct neural activations when probabilities are learned from experience as opposed to description. (Poster). Society for Neuroscience annual meeting, Chicago, Illinois.
- Wu, C; Meder, B; Nelson, JD; **Filimon, F** (2015, Aug). The effect of Presentation Formats on Rational Information Search. (Talk). Subjective Probability, Utility and Decision Making (SPUDM) conference, Budapest, Hungary.
- Filimon, F**; Rieth, CA; Sereno, MI; Cottrell, GW (2013). Distributed action representations revealed with multi-voxel pattern analysis. (Poster). Society for Neuroscience, San Diego, USA. Program No. 264.15.
- Filimon, F** (2012, June). Does multi-voxel pattern analysis solve the reverse inference problem? On decoding fMRI activations and 'mind reading'. (Talk). Annual Summer Interdisciplinary Conference (ASIC), Cala Gonone, Sardinia, Italy.
- Filimon, F**; Nelson, JD; Cottrell, GW; Sereno, MI; Sejnowski, TJ (2012, Apr). The value of information overlaps with cortical and subcortical reward structures. (Talk). TeaP (Experimental Psychology) Conference, University of Mannheim, Germany.
- Filimon, F**, Kloosterman, NA, Nelson, JD, Philiastides, MG, Heekeren, HR (2011). Perceptual decision making: disentangling perceptual and motor decisions with event-related fMRI. (Talk). Annual Summer Interdisciplinary Conference (ASIC), Caldes de Boí, Spain.
- Filimon, F**, Nelson, JD, Sejnowski, TJ, Sereno, MI, Cottrell, GW (2010). Expected value of information overlaps with reward circuits in humans. (Talk). Society for Neuroscience, San Diego, USA. Program No. 129.10.
- Filimon, F**, Kloosterman, NA, Nelson, JD, Philiastides, MG, Heekeren, HR (2010). Disentangling sensory integration and motor planning during perceptual decision making: an event-related fMRI study. (Poster). Cognitive Neuroscience Society, Montréal, Canada. Program No. H 69.
- Filimon, F**, Nelson, JD, Kloosterman, NA, Philiastides, MG, Heekeren, HR (2009). Sensory and motor correlates of perceptual decision making investigated with fMRI. (Talk). Society for Neuroscience, Chicago, USA. Program No. 122.1.
- Filimon, F** (2008). Non-spatial posterior parietal activations for finger, hand, and arm movements in humans. (Poster). Society for Neuroscience, Washington, D.C., USA. Program No. 854.16.
- Filimon, F**, Nelson, JD, Sereno, MI (2007). Tactile spatial exploration in humans investigated with fMRI. (Poster). Society for Neuroscience, San Diego, USA. Program No. 74.11.
- Filimon, F**, Nelson, JD, Sereno, MI. (2007). Human fMRI of tactile spatial representations. (Poster). Vision Science Society annual meeting, Sarasota, Florida, USA. Published in: *Journal of Vision*, 7(9): 301, 301a, <http://journalofvision.org/7/9/301>
- Filimon, F**, Nelson, JD, Sereno, MI (2006). Egocentric and allocentric reference frames for eye movements - an fMRI study. (Poster). Vision Science Society annual meeting, Sarasota, Florida, USA. Published in: *Journal of Vision*, 6(6): 979a, <http://journalofvision.org/6/6/979>

- Nelson, JD, Cottrell, GW, **Filimon, F**, Sejnowski, T (2005). (Poster). Optimal experimental design models of naive human information acquisition. Neural Information Processing Systems (NIPS) workshop, Whistler, Canada.
- Sadaghiani, S, **Filimon, F**, Hagler, DJ, Sereno MI (2005) Spatiotemporal brain-activation pattern during visually-guided reaching using cortical surface-based event-related methods. (Talk). Society for Neuroscience, Washington D.C. Program No. 363.7.
- Filimon, F**, Nelson, JD, and Sereno, MI (2005). Mirror neurons for observation, mental simulation, and execution of reaching movements in humans. (Talk). Annual Summer Interdisciplinary Conference (ASIC), Briançon, France. <http://www.cogs.indiana.edu/asic/2005/abstracts.html>
- Filimon, F**, Nelson, JD, & Sereno, MI (2005). Parietal cortex involvement in visually-guided, non-visually guided, observed, and imagined reaching, compared to saccades. (Talk). Vision Science Society annual meeting, Sarasota, Florida, USA. Published in: *Journal of Vision*, 5(8): 629a, <http://journalofvision.org/5/8/629>
- Filimon, F**, Nelson, JD, and Sereno, MI (2005). Human parietal activations to visually guided and non-visually guided reaching versus saccades. (Poster). Cognitive Neuroscience Society, New York, NY. Program No. A 233.
- Filimon, F**, and Sereno, MI (2004). Direct reaching and eye movements to visual targets studied with fMRI. (Talk). Society for Neuroscience, San Diego, USA. Program No. 603.14.
- Filimon, F**, Hagler, DJ, and Sereno, MI (2004). Overlapping neural substrates for executed, observed, and imagined reaching movements: a functional Magnetic Resonance Imaging study. (Poster). Cognitive Neuroscience Society, San Francisco, USA. Program No. B 128.

INVITED TALKS

The neural basis of the expected value of information. April 27, 2017. University of Surrey, Department of Psychology.

Economic decision making across sensory modalities: heuristics vs. expected utility models. November 11, 2016. Invited talk at the conference "I neuroni delle scelte: I processi decisionali e la neuroeconomia", Prato, Italy.

Motor and cognitive functions of the parietal lobe: Perception for Action, Decision Making & Embodiment. July 25, 2016. Invited talk at CiNet Institute, Osaka, Japan.

From Perception for Action to Cognition. March 30, 2016, Department of Psychology, Florida Atlantic University, USA.

The Value of Information: disentangling information and reward with fMRI. March 18, 2016. 8th Cracow Cognitive Science Conference on Intelligence, pre-conference lecture, Institute of Philosophy, Jagiellonian University Krakow, Poland.

Neural substrates of probabilistic perceptual decisions based on experienced probabilities vs. descriptive statistics. February 6, 2015, at the Center for Logic, Language, and Cognition, University of Turin, Italy. Workshop on: Information, Search, and Causes: Rational and cognitive approaches.

Disentangling perceptual and motor decisions using event-related fMRI. February 26, 2014, at Department of Psychology, Swansea University, UK.

How spatial reference frames are represented in the brain. May 19, 2014, at Café Scientifique (Wissenswerkstatt), Berlin, Germany.

<http://wissenswerkstatt-berlin.de/activities/specialevents/cafe-scientifique/>
<http://www.meetup.com/de/The-Bit-and-the-Cosmos/events/160501912/>

Experience-based versus Description-based perceptual decisions. May 14, 2014, at MRI group at the Max Planck Institute for Biological Cybernetics, Tübingen, Germany.

Cognitive, Sensory, and Motor Functions of the Posterior Parietal Cortex. March 22, 2013, at Centre for Vision and Visual Cognition, Department of Psychology, Durham University, UK.

How embodied are perceptual decisions? Disentangling perceptual and motor decisions. May 8, 2012, at Department of Biological Psychology and Neuropsychology, University of Hamburg, Germany.

Multisensory sensorimotor representations in posterior parietal cortex. March 27, 2008, at Texas Medical School at Houston, USA.

MEMBERSHIP AND PROFESSIONAL ACTIVITIES

Society for Neuroscience
Human Brain Mapping
Society for Cognitive Neuroscience
Vision Sciences Society

Co-Editor of *Cognitive Science Online*, an online journal produced by the Department of Cognitive Science, University of California, San Diego. (2005-2006; 2007) (<http://cogsci-online.ucsd.edu>)

Reviewer (ad-hoc): Journal of Neuroscience, Cerebral Cortex, NeuroImage, Journal of Cognitive Neuroscience, Journal of Neurophysiology, Experimental Brain Research, PLOS One, Philosophical Psychology

RESEARCH EXPERIENCE

**Postdoctoral & Research Fellow
/Scientist**
(2008-present)

Max Planck Institute for Human Development, Berlin;
University College London; Free University Berlin
functional and structural MRI research
experiment design, data collection and analysis
certified MRI operator for Siemens 3T systems
FSL, FreeSurfer, AFNI, Matlab, Unix scripting, Python

Graduate Research Assistant
(2002-2008)

University of California, San Diego
Department of Cognitive Science
functional and structural MRI research
experiment design, data collection and analysis
certified MRI operator for Varian (4T, 3T), GE 3T systems

used FreeSurfer, AFNI, Matlab, Final Cut Pro
created and edited videos of hand actions

Undergraduate Research Assistant
(2000-2001)

University of Auckland, New Zealand
Department of Psychology
Electroencephalography recordings
(high-density 128-electrode caps)
used DataView software

TEACHING EXPERIENCE (as instructor with full responsibility for course)

Systems Neuroscience
(2008)

University of California, San Diego
Department of Cognitive Science
(upper division undergraduate course, 125 students)
(PhD students were also assigned to take my course)
designed and gave lectures
designed and gave exams

fMRI bootcamp
(2007, 2008)

University of California, San Diego
NSF IGERT program on
Vision & Learning in Humans & Machines
“bootcamp” weeklong course on physics of (f)MRI
fMRI experiment design
fMRI data analysis with FreeSurfer and AFNI

TEACHING EXPERIENCE (as teaching assistant or guest instructor)

Cognitive Science
(2015; 2017)

Humboldt University Berlin
Berlin School of Mind and Brain (Ph.D. program)
guest lectures on decision making, value of information

Cognitive Neuroscience
(2013-2014)

Humboldt University Berlin
Berlin School of Mind and Brain (master’s program)
guest lecture on somatosensory system
designed lectures for discussion sections
prepared handouts and online material
helped select course readings, and design exam

Systems Neuroscience
(2002-2007)

University of California, San Diego
Department of Cognitive Science
led discussion sections and review sections,
prepared handouts and online material
held office hours, graded exams
received Superior Teaching Award for 2003, and
Teaching Excellence award for 2004, 2005, 2006, 2007

Cognitive Neuroscience
(2002)

University of California, San Diego
Department of Cognitive Science
led discussion sections, held office hours,
helped design exams, graded exams

IGERT NSF bootcamp

University of California, San Diego

(2004, 2006)

supervised week-long fMRI lab project
fMRI data analysis

Evolution, Behavior, Cognition
(2001)

University of Auckland, New Zealand
Department of Psychology
held discussion sections, graded exams

Experimental Psychology
(2001)

University of Auckland, New Zealand
Department of Psychology
held lab sessions, assisted with experiments; graded exams

Biopsychology
(2000)

University of Auckland, New Zealand
Division of Psychology and Language Sciences
held discussion and laboratory sessions; graded exams.

OTHER

Languages spoken:

- native-level proficiency: English, Romanian, German
- full professional proficiency: French
- elementary proficiency: Italian, Spanish, Mandarin Chinese