IDENTIFYING INFORMATION:

NAME: Hélie, Sébastien

ORCID iD: https://orcid.org/0000-0003-2854-6198

POSITION TITLE: Professor of Psychological Sciences

PRIMARY ORGANIZATION AND LOCATION: Purdue University, West Lafayette, Indiana, United States

Professional Preparation:

ORGANIZATION AND LOCATION	DEGREE (if applicable)	RECEIPT DATE	FIELD OF STUDY
University of California Santa Barbara, Santa Barbara, California, United States	Postdoctoral Fellow	09/2008 - 04/2011	Psychological & Brain Sciences
Rensselaer Polytechnic Institute, Troy, New York, United States	Postdoctoral Fellow	09/2006 - 08/2008	Cognitive Science
Universite du Quebec A Montreal, Montreal, Quebec, QC, Canada	PHD	02/2007	Cognitive Science
Universite de Montreal, Montreal, Quebec, QC, Canada	MS	05/2003	Cognitive Psychology
Universite de Montreal, Montreal, Quebec, QC, Canada	BS	05/2001	Psychology

Appointments and Positions

2012 - present Professor of Psychological Sciences, Purdue University, West Lafayette, Indiana, United States

2020 - present Director, Center for Research on Brain, Behavior, and NeuroRehabilitation , Purdue University, West Lafayette, Indiana, United States

2022 - 2022 Acting Director, Purdue Life Sciences MRI Facility, Purdue University, West Lafayette, Indiana, United States

2016 - 2022 Associate Professor, Psychological Sciences, Purdue University, West Lafayette, Indiana, United States

2016 - 2020 Co-Director, Center for Research on Brain, Behavior, and NeuroRehabilitation, Purdue University, West Lafayette, Indiana, United States

2015 - 2018 Associate Director, Purdue Life Sciences MRI Facility, Purdue University, West Lafayette, Indiana, United States

2012 - 2016 Assistant Professor, Psychological Sciences, Purdue University, West Lafayette, Indiana, United States

2011 - 2012 Assistant Researcher, Psychological & Brain Sciences, University of California Santa Barbara, Santa Barbara, California, United States

2009 - 2010 Lecturer, Psychological & Brain Sciences, University of California Santa Barbara, Santa Barbara, California, United States

2007 - 2007 Adjunct Professor, Cognitive Science, Rensselaer Polytechnic Institute, Troy, New York, United States

Products

Products Most Closely Related to the Proposed Project

1. Hélie S, Sun R. Incubation, insight, and creative problem solving: a unified theory and a connectionist model. Psychol Rev. 2010 Jul;117(3):994-1024. PubMed PMID: 20658861.
2. Hélie S, Lim LX, Adkins MJ, Redick TS. A computational model of prefrontal and striatal interactions in perceptual category learning. Brain Cogn. 2023 Jun;168:105970. PubMed Central PMCID: PMC10175240.
3. Fleischer P, Hélie S. A unified model of rule-set learning and selection. Neural Netw. 2020 Apr;124:343-356. PubMed PMID: 32044561.
4. Helie S, Roeder JL, Vucovich L, Rünger D, Ashby FG. A neurocomputational model of automatic sequence production. J Cogn Neurosci. 2015 Jul;27(7):1412-26. PubMed PMID: 25671503.
5. Kovacs P, Hélie S, Tran AN, Ashby FG. A neurocomputational theory of how rule-guided behaviors become automatic. Psychol Rev. 2021 Apr;128(3):488-508. PubMed PMID: 33630631.

Other Significant Products, Whether or Not Related to the Proposed Project

1. Hélie S, Fleischer PJ. Simulating the Effect of Reinforcement Learning on Neuronal Synchrony and Periodicity in the Striatum. Front Comput Neurosci. 2016;10:40. PubMed Central PMCID: PMC4850239.
2. Hélie S, Paul EJ, Ashby FG. Simulating the effects of dopamine imbalance on cognition: from positive affect to Parkinson's disease. Neural Netw. 2012 Aug;32:74-85. PubMed Central PMCID: PMC3368085.
3. Hélie S, Proulx R, Lefebvre B. Bottom-up learning of explicit knowledge using a Bayesian algorithm and a new Hebbian learning rule. Neural Netw. 2011 Apr;24(3):219-32. PubMed PMID: 21239141.
4. Calic G, Mosakowski E, Bontis N, Helie S. Is maximizing creativity good? The importance of elaboration and internal confidence in producing creative ideas. Knowledge Management Research & Practice. 2023; 20:776-791.
5. Hélie S, Pizlo Z. When is Psychology Research Useful in Artificial Intelligence? A Case for Reducing Computational Complexity in Problem Solving. Top Cogn Sci. 2022 Oct;14(4):687-701. PubMed PMID: 34467642.

Synergistic Activities

1. I have been a panelist and presenter for two consecutive years at workshops on computational creativity attached to the annual Cognitive Science Society conference (2018, 2019).
2. I serve as an action-editor for the journals Neural Networks and Frontiers in Human Neuroscience (Cognitive Neuroscience section).
3. I created a graduate course (Mathematical foundations of learning in models of cognition) at RPI that was cross-listed in three departments and has been expanded as Introduction to