

# Ivana Kajić

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<b>EDUCATION</b>	<b>University of Waterloo</b> , Canada Ph.D. Candidate in Computer Science (Anticipated graduation: Oct 2020) Thesis: Cognitively plausible models of distributional semantic representations (supervisor: Dr. Chris Eliasmith)	2016 – present
	<b>Technical University of Berlin</b> , Germany M.Sc., Computational Neuroscience (with distinction)	2011 – 2014
	<b>University of Zagreb</b> , Croatia B.Sc., Computing (Computer Science) Exchange year: Karlsruhe Institute of Technology, Germany	2008 – 2011
<b>AWARDS, SCHOLARSHIPS &amp; TRAVEL GRANTS</b>	The Croatian-Canadian Scholarship	2018
	Ontario Graduate Scholarship (the international student recipient for Faculty of Math)	2017
	University of Waterloo President's Scholarship	2017
	Cheriton Research Symposium Poster Award	2017
	Google Travel Award for Grace Hopper Conference	2017
	David R. Cheriton Graduate Scholarship	2017
	University of Waterloo Graduate Excellence Award in Computer Science	2017
	University of Waterloo Grace Hopper Attendance Scholarship	2016
	University of Waterloo Provost Doctoral Entrance Award	2016
	University of Waterloo Entrance Scholarship	2016
	University of Waterloo International Doctoral Student Award	2016
	CSN II Travel Grant for Okinawa Computational Neuroscience Course	2015
Google Anita Borg Memorial Scholarship	2014	
<b>RESEARCH &amp; WORK EXPERIENCE</b>	<b>PhD Research Intern</b> , DeepMind, Montreal, Canada - Studying emergence of communication in co-operative, multiagent reinforcement learning	Jul 2019 – Dec 2019
	<b>Site Reliability Engineering Intern</b> , Google, London, United Kingdom - Designed and implemented a production service to detect and annotate automation failures in a software stack managing Ads services	2018
	<b>Teaching Assistant</b> , University of Waterloo, Canada CS 116 Introduction to Computer Science 2 (Winter 2018, Winter 2019) CS 240 Data Structures and Data Management (Fall 2017) CS 343 Concurrent and Parallel Programming (Fall 2016)	2016 – 2019
	<b>Research Fellow</b> , Plymouth University, United Kingdom Marie Curie Research Fellow, Centre for Robotics and Neural Systems - Created computational neural network models of semantic processes involved in creative verbal problem solving - Implemented a semantic network in a neurally plausible model that reproduced performance observed in human experiments	2014 – 2016

## PUBLICATIONS

Voelker, A., **Kajić, I.**, Eliasmith, C. (2019). Legendre Memory Units: Continuous-Time Representation in Recurrent Neural Networks. The 33rd Conference on Neural Information Processing Systems (NeurIPS), Vancouver, Canada, December 2019

**Kajić, I.**, Schröder, T., Stewart, T. C., Thagard, P. (2019). The Semantic Pointer Theory of Emotion: Integrating Physiology, Appraisal, and Construction. *Cognitive Systems Research* 58: 35-53.

**Kajić, I.**, Eliasmith, C. (2018). Evaluating the Psychological Plausibility of word2vec and GloVe Distributional Semantic Models. Technical Report, Centre for Theoretical Neuroscience, Waterloo, ON, 08/2018, doi:10.13140/RG.2.2.25289.60004.

Cohen, R., Mathiarasu, N., Aarif, R., Ansari, S., Fraser, D., Hegde, M., Henderson, J., **Kajić, I.**, Khan, A., Liao, Z. and Mancisidor, A., (2018). An education-based approach to aid in the prevention of cyberbullying. *ACM SIGCAS Computers and Society*, 47(4), 17–28.

**Kajić, I.**, Gosmann, J., Komer, B., Orr, R. W., Stewart, T. C., Eliasmith, C. (2017). A Biologically Constrained Model of Semantic Memory Search. Proceedings of the 39th Annual Conference of the Cognitive Science Society (Austin, TX: Cognitive Science Society), 631–636

**Kajić, I.**, Gosmann, J., Stewart, T. C., Wennekers, T., and Eliasmith, C. (2017). A Spiking Neuron Model of Word Associations for the Remote Associates Test. *Frontiers in Psychology* 8:99, doi: 10.3389/fpsyg.2017.00099

**Kajić, I.**, Gosmann, J., Stewart, T. C., Wennekers, T., Eliasmith, C. (2016). Towards a Cognitively Realistic Representation of Word Associations. Proceedings of the 38th Annual Conference of the Cognitive Science Society (Austin, TX: Cognitive Science Society), 2183–2188

**Kajić, I.**, Wennekers, T. (2015). Neural Network Model of Semantic Processing in the Remote Associates Test. In Proceedings of the NIPS Workshop on Cognitive Computation: Integrating Neural and Symbolic Approaches co-located with the 29th Annual Conference on Neural Information Processing Systems (NIPS 2015), Montreal, Canada, December 11-12, 2015. 73–81

**Kajić, I.**, Schillaci, G., Bodiroža, S., Hafner, V. V. (2014). Learning Hand-Eye Coordination for a Humanoid Robot using SOMs. In Proceedings of the 9th ACM/IEEE International Conference on Human-Robot Interaction (HRI 2014), Bielefeld, Germany.

**Kajić, I.**, Schillaci, G., Bodiroža, S, Hafner, V. V. (2014). A Biologically Inspired Model for Coding Sensorimotor Experience Leading to the Development of Pointing Behaviour in a Humanoid Robot. Workshop: A bridge between Robotics and Neuroscience, International Conference on Human-Robot Interaction (HRI 2014), Bielefeld, Germany.

Putze, F., Heger, D., Müller, M., Chassein, Y., **Kajić I.**, Schultz, T. (2013). Profiling Arousal in Response to Complex Stimuli using Biosignals, BIOSIGNALS 2013: 347-350, Barcelona, Spain

## INVITED TALKS

A Biologically Constrained Model of Semantic Memory Search at The 39th Annual Meeting of Cognitive Science Society, London, United Kingdom (July 2017)

Bridging the Gap Between the Natural and Artificial Intelligence at Robotics Innovation Group Talk Series Conestoga College, Kitchener, Canada (November 2016)

Towards a Cognitively Realistic Representation of Word Associations at The 38th Annual Meeting of Cognitive Science Society, Philadelphia, United States (August 2016)

Learning Hand-Eye coordination for a Humanoid Robot using SOMs at The German-Israeli Minerva School on Cognitive Robotics, Berlin, Germany (February 2014)

**POSTER  
PRESENTATIONS**

Kajić, I., & Eliasmith, C. A Biologically Plausible Neural Network Model of Semantic Memory Search, Cheriton Research Symposium, University of Waterloo, Canada (September 2017)

Kajić, I., & Wennekers, T. Neural network model of semantic processing in the Remote Associates Test, NIPS Workshop on Cognitive Computation, Montreal, Canada (December 2015)

Kajić, I., & Wennekers, T. A Hebbian cell assembly based neural field model for the remote associate task and creative search at The 24th Annual Computational Neuroscience Meeting, Prague, Czech Republic (July 2015)

Kajić, I., & Wennekers, T. Neural Network Model of Semantic Processing in the Remote Associates Test at OIST Computational Neuroscience course 2015, Okinawa, Japan (June 2015)

Kajić, I., & Wennekers, T. Remote Associations in Hebbian Cell Assemblies at Integrated Systems Neuroscience Workshop 2015, Manchester, United Kingdom (March 2015)

Kajić, I., & Wennekers, T. Remote Associations in Hebbian Cell Assemblies at Interdisciplinary College 2015, Günne, Germany (March 2015)

Kajić I., Schillaci, G., Bodiroza, S. and Hafner, V. V. Learning Hand-Eye Coordination for a Humanoid Robot using SOMs at Google Scholars Retreat, Zrich, Switzerland (June 2014)

Kajić I., Schillaci, G., Bodiroza, S. and Hafner, V. V. Learning Hand-Eye Coordination for a Humanoid Robot using SOMs at 9th ACM/IEEE International conference on Human-Robot Interaction, Bielefeld, Germany (March 2014)

**LEADERSHIP &  
SERVICE**

**Graduate committee member, UW Women in Computer Science** 2015 – present

- Organized talks and networking events for graduate students
- Served on a committee reviewing Grace Hopper scholarship applications
- Welcomed prospective graduate students, spoke on panels about graduate studies experiences
- Administrator for the female CS graduate students mailing list

**Organizer, Programming Workshops for Beginners** 2016 – 2018

- Organized and instructed three day programming workshops at the University of Waterloo (Jan 2016, Nov 2016, Nov 2017, Jun 2018)
- Acquired \$2200 in external funding from Python Software Foundation and Google through grant proposals

**Peer Review Activities**

The 41st Annual Meeting of the Cognitive Science Society 2019  
Cognitive Neurodynamics 2019  
IEEE Transactions on Cognitive and Developmental Systems 2016

**Software Carpentry Instructor**

- Taught basic computing skills for science, engineering and medical research (Python, Shell, Git) at the University of Waterloo

**TECHNICAL &  
OTHER SKILLS**

Programming: Python (Numpy, Scipy, Pandas, Matplotlib, Jupyter, Keras, TensorFlow), C, C++, UNIX Shell, Matlab, SQL

Other: version control systems (git, svn), TDD, design patterns and OOP, SQL,  $\text{\LaTeX}$

Languages: Croatian (native), English (fluent), German (fluent), French (basic)