Ivana Kajić

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EMPLOYMENT HISTORY

Senior Research Scientist, Google DeepMind, Montréal, Canada   Dec 2020 – present
- Multimodal generation and understanding. Model evaluation and human data.

Research Intern, DeepMind, Montréal, Canada   Jul 2019 – Dec 2019
- Research on emergence of communication in co-operative, multiagent reinforcement learning

Site Reliability Engineering Intern, Google, London, United Kingdom   Sep 2018 – Dec 2018
- Design and implementation of a production service to detect automation failures in a software stack managing Ads services

Teaching Assistant, University of Waterloo, Canada   2016 – 2019
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)

Research Fellow, Plymouth University, United Kingdom   2014 – 2016
Marie Curie Research Fellow, Centre for Robotics and Neural Systems
- Research on neural network models of semantic processes involved in creative verbal problem solving

PUBLICATIONS

[Under review] Amara, I., Humayun, A. I., **Kajić, I.**, Parekh, Z., Harris, N., Young, S., Nagpal, C., Kim, N., He, J., Vasconcelos, C. N, Ramachandran, D., Farnadi, G., A Heller, K., Havaei, M., Rostamzadeh, N. (2024) EraseBench: Understanding The Ripple Effects of Concept Erasure Techniques. (CVPR)

[Under review] Wiles, O., Zhang, C., Albuquerque, I., **Kajić, I.**, Wang, S., Bugliarello, E., Onoe, Y., Papalampidi, P., Ktena, I., Knutsen, C., Rashtchian, C., Nawalgaria, A., Pont-Tuset, J., Nematzadeh, A. (2024) One slice is not enough: In search of stable conclusions in text-to-image evaluation (ICLR)

Kajić, I., Wiles, O., Albuquerque, I., Bauer, M., Wang, S., Pont-Tuset, J., Nematzadeh, A. (2024). Evaluating Numerical Reasoning in Text-to-Image Models. In The 38th Conference on Neural Information Processing Systems (NeurIPS)

Vasconcelos, C. N., Rashwan, A., ..., **Kajić, I.**, ... , Baldridge, J. M. (2024). Greedy growing enables high-resolution pixel-based diffusion models. Transactions on Machine Learning Research.

Baldridge, J., Bauer K., ..., **Kajić, I.**, ..., Nicholas P. (2024) Imagen 3, arXiv preprint arXiv:2408.07009

Wiles, O., Zhang, C., Albuquerque, I., **Kajić, I.**, Wang, S., Bugliarello, E., Onoe, Y., Knutsen, C., Rashtchian, C., Pont-Tuset, J., Nematzadeh, A. (2024) Revisiting Text-to-Image Evaluation with Gecko: On Metrics, Prompts, and Human Ratings. (arXiv preprint arXiv:2404.16820)

Kajić, I., Nematzadeh, A., (2023). Evaluating Visual Number Discrimination in Deep Neural Networks.Proceedings of the Annual Meeting of the Cognitive Science Society (Vol. 45, No. 45).

Agrawal, A., **Kajić, I.**, Bugliarello, E., Davoodi, E., Gergely, A., Blunsom, P. and Nematzadeh, A., (2023) Reassessing Evaluation Practices in Visual Question Answering: A Case Study on Out-of-Distribution Generalization. In Findings of the Association for Computational Linguistics: EACL 2023 (pp. 1201-1226).

Thagard, P., Larocque, L., **Kajić, I.** (2023) Emotional Change: Neural Mechanisms Based on Semantic Pointers, Emotion (APA journal)

Kalinowska, A., Davoodi, E., Strub, F., Mathewson, K.W., **Kajić, I.**, Bowling, M., Murphey, T.D. and Pilarski, P.M., (2022) Over-communicate no more: Situated RL agents learn concise communication protocols. arXiv preprint arXiv:2211.01480.

Kajić, I. and Nematzadeh, A., (2022) Probing Representations of Numbers in Vision and Language Models. In SVRHM 2022 Workshop@ NeurIPS.

Kajić, I., Stewart T.C. (2021) Biologically Constrained Large Scale Model of the Wisconsin Card Sorting Test. Proceedings of the 43rd Annual Conference of the Cognitive Science Society

Kajić, I. (2020). Computational Mechanisms of Language Understanding and Use in the Brain and Behaviour. PhD Thesis.

Kajić, I., Aygün, E., Precup, D. (2020). Learning to cooperate: Emergent communication in cooperative navigation. Proceedings of the 42nd Annual Conference of the Cognitive Science Society (Austin, TX: Cognitive Science Society 1993–1999

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)

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

EDUCATION	**University of Waterloo**, Canada Ph.D., Computer Science Thesis: Computational Mechanisms of Language Understanding and Use in the Brain and Behaviour	2016 – 2020
	Technical University of Berlin, Germany M.Sc., Computational Neuroscience (with distinction)	2011 – 2014
	University of Zagreb, Croatia B.Sc., Computing (Computer Science) Exchange year: Karlsruhe Institute of Technology, Germany	2008 – 2011
SERVICE	**Program Chair: Montreal AI Syposium** - Local event with over 300 attendees from academia and industry - Contributed to all major aspects of conference organization: planning, topic selection, sponsorship acquisition, meta-reviewing, selection and invitation of keynote speakers and panelists, day-of program moderation - Chaired a panel session on the topic of "Societal impacts of generative AI"	2024
	Topic Area Leader at 30th Telluride Neuromorphic Cognition Engineering Workshop - Workshop is a project-based meeting attended by 100 participants organized around areas that connect neural cognition and artificial intelligence - Organized a topic area on "Lanugage & Thought" with student projects, invited talks from experts in industry and academia - Reviewed student appllications, acquired sponsorship	2024

Invited Peer Reviews for Conferences and Journals

Association for Computational Lingusitics (ACL) Rolling Review	2021–2024
ACL and the 11th International Joint Conference on Natural Language Processing	2021
Cognitive Processing	2021
The Annual Meeting of the Cognitive Science Society	2019–2024
Reviews in various journals and workshops: Autonomous Agents and Multi-agent Systems, AAAI, Cognitive Neurodynamics	

TECHNICAL & OTHER SKILLS	Programming: Python (Numpy, Scipy, Pandas, Matplotlib, Jupyter, JAX, TensorFlow), C++ (basic), UNIX Shell, Matlab, SQL Other: version control systems (git, svn), TDD, design patterns and OOP, SQL, LaTeX Languages: Croatian (native), English (fluent), German (fluent), French (basic) Maths: algebra, calculus, dynamical systems, statistics, signal processing