

ALONA FYSHE

Associate Professor
Department of Computing Science & Department of Psychology
University of Alberta

EMAIL: alona@ualberta.ca
WEBPAGE: <http://webdocs.cs.ualberta.ca/~alona/>
ADDRESS: 3-56 Athabasca Hall
University of Alberta
Edmonton, AB
T6G 2R3

RESEARCH INTERESTS

Machine learning, neuroscience, natural language processing (NLP)

EDUCATION

Carnegie Mellon University Pittsburgh, PA, USA
PhD Machine Learning 2009-2015
Thesis: "Corpora and Cognition: The Semantic Composition of Adjectives and Nouns in the Human Brain"
Supervisor: Tom Mitchell

University of Alberta Edmonton, AB, Canada
MSc Computing Science 2004-2006
Thesis: "Term Generalization and Synonym Resolution for Biological Abstracts"
Supervisor: Duane Szafron

University of Alberta Edmonton, AB, Canada
BSc Computing Science 2000-2004

EMPLOYMENT

2023-PRESENT | **Associate Professor at University of Alberta**, Edmonton, AB

2023-PRESENT | **Fellow-in-Residence, Science Communication at Alberta Machine Intelligence Institute (Amii)**, Edmonton, AB

2018-2023 | **Assistant Professor at University of Alberta**, Edmonton, AB

2015-2018 | **Assistant Professor at University of Victoria**, Victoria, BC

2007-2009 | **Software Engineer at Google**, Pittsburgh, PA
Used machine learning to improve *Google Shopping*.

Journals

- [J1] Lin Chen, Gaisha Oralova, Shannon Clark, Daniela Teodorescu*, Alona Fyshe, Carrie Demmans Epp, Maxwell Helfrich, and Charles Perfetti. Tracking the dynamic word-by-word incremental reading through multimeasures. *Journal of Experimental Psychology: Learning, Memory, and Cognition*. (August, 2025)
- [J2] Thomas D Ferguson*, Alona Fyshe, Adam White. Electrophysiological signatures of the effect of context on exploration: Greater attentional and learning signals when exploration is costly. *Brain Research* (March, 2025)
- [J3] Greta Tuckute, Dawn Finzi, Eshed Margalit, Jacob Yates, Joel Zylberberg, Alona Fyshe, SueYeon Chung, Evelina Fedorenko, Nikolaus Kriegeskorte, Kalanit Grill-Spector, Kohitij Kar. “How to Optimize Neuroscience Data Utilization and Experiment Design for Advancing Brain Models of Visual and Linguistic Cognition?” *Neurons, Behavior, Data Analysis, and Theory* (January, 2025)
- [J4] Sijie Ling*, Alex Murphy* and Alona Fyshe. Exploring temporal sensitivity in the brain using multi-timescale language models: an EEG decoding study. *Computational Linguistics* (July 2024)
- [J5] Thomas D. Ferguson*, Alona Fyshe, Adam White, Olave E. Krigolsen. Humans Adopt Different Exploration Strategies Depending on the Environment. *Computational Brain and Behavior* (August 2023).
- [J6] Han Wang, Archit Sakhadeo*, Adam M. White, James M. Bell, Vincent Liu, Xutong Zhao, Puer Liu, Tadashi Kozuno, Alona Fyshe, and Martha White. “No More Pesky Hyperparameters: Offline Hyperparameter Tuning for RL.” *Transactions on Machine Learning Research* (May 2022).
- [J7] Joseph C.Y. Lau, Alona Fyshe, Sandra R Waxman. Rhythm may be key to linking language and cognition in young infants: Evidence from machine-learning. *Frontiers in Psychology*. (May 2022)
- [J8] Brent D. Davis, Dawn E. Mcknight*, Daniela Teodorescu*, Anabel Quan-Haase, Rumi Chunara, Alona Fyshe & Daniel J. Lizotte. Quantifying depression-related language on social media during the COVID-19 pandemic. *International Journal of Population Data Science*, 5(4). March 2022
- [J9] Chris Foster*, Chad C Williams, Olav E Krigolson, Alona Fyshe. Using EEG to decode semantics during an artificial language learning task. *Brain and Behavior* 11, e2234. June 2021
- [J10] Dhanush Dharmaretnam*, Chris Foster*, Alona Fyshe. Words as a window: Using word embeddings to explore the learned representations of Convolutional Neural Networks. *Neural Networks* 137, pages 63-74. January 2021
- [J11] Maryam Honari-Jahromi*, Brea Chouinard*, Esti Blanco-Elorrieta, Liina Pylkkänen, Alona Fyshe. Neural representation of words within phrases: Temporal evolution of color-adjectives and object-nouns during simple composition. *PLoS ONE* 16 (3), e0242754. March 2021
- [J12] Callie Federer, Haoyan Xu*, Alona Fyshe, Joel Zylberberg. Improved object recognition using neural networks trained to mimic the brain’s statistical properties. *Neural Networks* 131, 103-114. July 2020
- [J13] Alona Fyshe, Gustavo Sudre, Leila Wehbe, Nicole Rafidi and Tom M Mitchell. The Lexical Semantics of Adjective Noun Phrases in the Human Brain. *Human Brain Mapping*, 40:4457– 4469. 2019
- [J14] Alona Fyshe. Studying Language in Context Using the Temporal Generalization Method. *Philosophical Transactions of the Royal Society B* 375:20180531. 2019
- [J15] Leila Wehbe, Brian Murphy, Partha Talukdar, Alona Fyshe, Aaditya Ramdas, Tom Mitchell. Simultaneously Uncovering the Patterns of Brain Regions Involved in Different Story Reading Subprocesses. *PLoS ONE* 9(11): e112575. 2014
- [J16] John J Grefenstette, Shawn T Brown, Roni Rosenfeld, Jay DePasse, Nathan TB Stone, Phillip C Cooley, William D Wheaton, Alona Fyshe, David D Galloway, Anuroop Sriram, Hasan Guclu, Thomas Abraham and Donald S Burke. FRED (a Framework for Reconstructing Epidemic Dynamics): an open-source software system for modeling infectious diseases and control strategies using census-based populations. *BMC public health*. 13(1):940. 2013
- [J17] Gustavo Sudre, Dean Pomerleau, Mark Palatucci, Leila Wehbe, Alona Fyshe, Riitta Salmelin, Tom Mitchell. Tracking Neural Coding Of Perceptual And Semantic Features Of Concrete Nouns. *Neuroimage*, 62(1) 451-463. 2012
- [J18] Alona Fyshe, Yifeng Liu, Duane Szafron, Russ Greiner, and Paul Lu. Improving Subcellular Localization Prediction using Text Classification and the Gene Ontology. *Bioinformatics*, 24(21):2512-2517. 2008
- [J19] Paul Lu, Duane Szafron, Russell Greiner, David S. Wishart, Alona Fyshe, Brandon Percy, Brett Poulin, Roman Eisner, Danny Ngo and Nicholas Lamb. PA-GOSUB: a searchable database of model organism protein sequences

with their predicted Gene Ontology molecular function and subcellular localization. *Nucleic Acids Research*, 33:D147-D153. 2005

- [J20] Duane Szafron, Paul Lu, Russell Greiner, David S. Wishart, Brett Poulin, Roman Eisner, Zhiyong Lu, John Anvik, Cam Macdonell, Alona Fyshe, and David Meeuwis. Proteome Analyst: Custom Predictions with Explanations in a Web-based Tool for High-throughput Proteome Annotations. *Nucleic Acids Research*, 32:W365-W371. 2005

Conference Papers (Journal quality, acceptance rates $\sim 25\%$)

- [C1] Saeed Najafi* and Alona Fyshe. Offline Preference Optimization via Maximum Marginal Likelihood Estimation. *European Chapter of the Association for Computational Linguistics (EACL)*. March 2026.
- [C2] Thomas D. Ferguson*, Alona Fyshe, Adam White. Modeling human exploration with light-weight meta reinforcement learning algorithms. *Reinforcement Learning Conference (RLC)* August 2025.
- [C3] Laura Petrich, Sam Neumann, Alona Fyshe, Patrick Pilarski. Neural Network Sparsity in Brain-Body-Machine Interfaces. *IEEE International Conference on Rehabilitation Robotics (ICORR)*. May 2025.
- [C4] Cory Efird*, Alex Murphy*, Joel Zylberberg, Alona Fyshe. Finding Shared Decodable Concepts and their Negations in the Brain. *The Thirteenth International Conference on Learning Representations (ICLR)*. April 2025.
- [C5] Saeed Najafi* and Alona Fyshe. RIFF: Learning to Rephrase Inputs for Few-shot Fine-tuning of Language Models. *Findings of the 62nd Annual Meeting of the Association for Computational Linguistics (ACL)* Bangkok, Thailand. August 2024
- [C6] Bilal Ghanem* and Alona Fyshe. DISTO: Evaluating Textual Distractors for Multi-Choice Questions using Negative Sampling based Approach. Educational Data Mining. *International Conference on Educational Data Mining(EDM)*. Atlanta, USA. July 2024
- [C7] D Estes McKnight* and Alona Fyshe. Characterizing Human and Zero-Shot GPT-3.5 Object-Similarity Judgments. *Findings of the Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*. Mexico City, Mexico. June 2024
- [C8] Spencer M. von der Ohe* and Alona Fyshe. SoftSkillQG: Robust Skill-Targeted Reading Comprehension Question Generation Using Soft-prompts. *Proceedings of the Canadian Conference on Artificial Intelligence*. Guelph, Canada. May 2024
- [C9] Daniela Teodorescu*, Tiffany Cheng, Alona Fyshe, and Saif Mohammad. Language and Mental Health: Measures of Emotion Dynamics from Text as Linguistic Biosocial Markers. *Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing*, pages 3117–3133, Singapore. December 2023
- [C10] Saeed Najafi* and Alona Fyshe. Weakly-Supervised Questions for Zero-Shot Relation Extraction. *Proceedings of the 17th Conference of the European Chapter of the Association for Computational Linguistics*, pages 3075–3087, Dubrovnik, Croatia. May 2023
- [C11] Yuyang Nie, Hélène Deacon, Alona Fyshe, Carrie Demmans Epp. Predicting Reading Comprehension Scores of Elementary School Students. *Proceedings of the 15th International Conference on Educational Data Mining*, pages 158–170. Durham, UK. July 2022 **Best Student Paper**
- [C12] Bilal Ghanem*, Lauren Lutz Coleman, Julia Rivard Dexter, Spencer McIntosh von der Ohe*, Alona Fyshe. Question Generation for Reading Comprehension Assessment by Modeling How and What to Ask *Findings of the Association for Computational Linguistics (ACL)*, pages 2131–2146. Dublin, Ireland. May 2022
- [C13] Kirby Banman, Garnet Liam Peet-Pare*, Nidhi Hegde, Alona Fyshe, Martha White. Resonance in Weight Space: Covariate Shift Can Drive Divergence of SGD with Momentum *The Tenth International Conference on Learning Representations (ICLR)* (Virtual). April 2022
- [C14] Maryam Hashemzadeh*, Greta Kaufeld*, Martha White, Andrea E. Martin, Alona Fyshe. From Language to Language-ish: How Brain-Like is an LSTM's Representation of Nonsensical Language Stimuli *Findings of the Empirical Methods in Natural Language Processing (EMNLP)*, pages 645–656. Virtual. November 2020
- [C15] Qingfeng Lan*, Yangchen Pan, Alona Fyshe, Martha White. Maxmin Q-learning: Controlling the Estimation Bias of Q-learning. *International Conference on Learning Representations (ICLR)* Addis Ababa, Ethiopia. April 2020
- [C16] Dhanush Dharmaretnam*, Alona Fyshe. The Emergence of Semantics in Neural Network Representations of Visual Information. *In Proceedings of the 2018 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, Volume 2 (Short Papers)*, pages 776–780, New Orleans, Louisiana. October 2018

- [C17] Haoyan Xu*, Brian Murphy, Alona Fyshe. BrainBench: A Brain-Image Test Suite for Distributional Semantic Models. *Proceedings of Empirical Methods for Natural Language Processing (EMNLP)*, pages 2017–2021. Austin, TX. November 2016
- [C18] Cole Peterson*, Alona Fyshe. Poet Admits // Mute Cypher: Beam Search to find Mutually Enciphering Poetic Texts. *Proceedings of Empirical Methods for Natural Language Processing (EMNLP)*, pages 1339–1347. Austin, TX. November 2016
- [C19] Alona Fyshe, Leila Wehbe, Partha Talukdar, Brian Murphy, Tom Mitchell. A Compositional and Interpretable Semantic Space. *The Conference of the North American Chapter of the Association for Computational Linguistics - Human Language Technologies (NAACL HLT 2015)*, pages 32–41. Denver, Colorado. May 2015
- [C20] Alona Fyshe, Partha Pratim Talukdar, Brian Murphy and Tom M Mitchell. Interpretable Semantic Vectors from a Joint Model of Brain- and Text- Based Meaning. *The 52nd Annual Meeting of the Association for Computational Linguistics (ACL)*, pages 489–499. Baltimore, Maryland. May 2014
- [C21] Evangelos E. Papalexakis, Alona Fyshe, Nicholas Sidiropoulos, Partha Pratim Talukdar, Tom Mitchell, Christos Faloutsos. Good-Enough Brain Model: Challenges, Algorithms and Discoveries in Multi-Subject Experiments. *ACM Special Interest Group on Knowledge Discovery and Data Mining (SIGKDD)*, pages 94–104. New York City, USA. August 2014
- [C22] Alona Fyshe, Partha Talukdar, Brian Murphy and Tom Mitchell. Documents and Dependencies: an Exploration of Vector Space Models for Semantic Composition *International Conference on Computational Natural Language Learning (CoNLL 2013)*, pages 84–93. Sofia, Bulgaria, August 2013.
- [C23] Alona Fyshe, Emily Fox, David Dunson and Tom Mitchell. Hierarchical Latent Dictionaries for Models of Brain Activation. *Proceedings of the Fifteenth International Conference on Artificial Intelligence and Statistics, PMLR 22:409-421*, April 2012
- [C24] Brett Poulin, Roman Eisner, Duane Szafron, Paul Lu, Russ Greiner, D.S. Wishart, Alona Fyshe, Brandon Pearcy, Cam MacDonell and John Anvik. Visual Explanation of Evidence in Additive Classifiers. *Proceedings of Eighteenth Conference on Innovative Applications of Artificial Intelligence (IAAI)*, July 2006

Workshop Papers

- [W1] Helena Balabin*, Lauren DeLong, Rohan Saha, Rik Vandenberghe, Marie-Francine Moens, Alona Fyshe. Aligning Visual Structural Compositionality in Humans and Vision-Language Models. *In ICLR 2024 Workshop on Representational Alignment*. Rio de Janeiro, Brazil
- [W2] Alex Graeme Murphy*, Joel , Zylberberg and Alona Fyshe. Correcting Biased Centered Kernel Alignment Measures in Biological and Artificial Neural Networks. *In ICLR 2024 Workshop on Representational Alignment*. Vienna, Austria. May 2024
- [W3] Daniela Teodorescu*, Alona Fyshe and Saif M Mohammad. Utterance Emotion Dynamics in Children’s Poems: Emotional Changes Across Age *Workshop on Computational Approaches to Subjectivity, Sentiment, & Social Media Analysis*, pages 401–415. ACL July 2023
- [W4] Dhruv Mullick*, Bilal Ghanem*, and Alona Fyshe. Better handling coreference resolution in aspect level sentiment classification by fine-tuning language models. *Sixth Workshop on Computational Models of Reference, Anaphora and Coreference (CRAC)*, EMNLP. December 6-7, 2023 (**Best Paper Award**)

Book Chapters

- [B1] Leila Wehbe, Alona Fyshe, Tom Mitchell. Language processing in the brain: Mapping neural activity to language meaning. *Human Language: from Genes and Brains to Behavior*, MIT Press. 2019
- [B2] Brian Murphy, Leila Wehbe, Alona Fyshe. Decoding Language from the Brain. *Language, Cognition, and Computational Models*, Cambridge University Press. 2018 <https://doi.org/10.1017/9781316676974.003>

WHITE PAPERS/REPORTS

- [1] Werker, J. F., et al. Impact of COVID-19 on Language and Literacy in Canada. *Royal Society of Canada*. 2021 [Link](#)

NON-ACADEMIC PUBLICATIONS

- [1] Alona Fyshe. The BabyLM Challenge: In search of more efficient learning algorithms, researchers look to infants. (May 2025) [Link](#)
- [2] Alona Fyshe, Janet Werker. Psychology research during the pandemic: The upside of being online. *The Globe and Mail* (January 2021) [Link](#)
- [3] Alona Fyshe. Four Lessons for Starting a Research Lab. *Science Careers* (August 2018) [Link](#)
- [4] Alona Fyshe. Surviving your first year on the tenure track. *University Affairs* (March 2017) [Link](#)

PRESENTATIONS

- **Invited Keynote** Can a (stochastic) parrot understand you? Contemplating intelligence in the era of LLMs” – Cognitive Computational Neuroscience, New York. (2026)
- **Invited Keynote** What Wasps Can Teach Us About Artificial Intelligence? Intelligent Transportation Systems Canada Annual Meeting, Edmonton. AB.(2026)
- Panel Moderator, Could a Machine Be a Person? Upper Bound. Edmonton, AB. (2026)
- **Invited Keynote** Cognitive inspirations for Large Language Models. ReAlign Workshop, International Conference on Learning Representations (ICLR). Rio de Janeiro, Brazil. (2026)
- Finding Shared Decodable Concepts in the brain. NeuroAISys. Cold Spring Harbor, USA. (2024)
- DISTO: Evaluating Textual Distractors for Multiple Choice Questions using a Negative Sampling based Approach. Educational Data Mining. Atlanta, USA. (2024)
- Funny AI Fails and How to Avoid Them. Upper Bound. Edmonton, AB. (2024)
- ”Dancing, angry, thoughtful triangles: Exploring semantic encoding using a social attribution task” – Language in Interaction Conference, Max Planck Institute, Nijmegen, 2024
- ”ChatGPT and the state of Education” – ETL Professional Development Seminar, Edmonton, 2023 (invited keynote)
- Panel Member, Being Human in the Age of AI: A Philosophical Inquiry of AI/Human Value Alignment. Upper Bound. Edmonton, AB. (2024)
- Finding Shared Decodable Concepts in the Human Brain. NeuroAI. Montreal, QC. (2023)
- Chatbots, Panel Discussion. AI salon, AI4Society. Edmonton, AB. (2023)
- **Invited Keynote** Concepts in the Brain. CanAI. Montreal, QC. (2023)
- What can language models tell us about the brain? Science Talks Webinar, Faculty of Science, University of Alberta (2023)
- **Invited Keynote** What can AI tell us about the brain, and what can the brain tell us about AI? AI Week. Edmonton, AB. (2022)
- What’s AI got to do with the brain? AI4Good Lab, Virtual. (2022)
- **Invited Plenary Panel** Alona Fyshe, Cian O’Donnell, Sara A. Solla, Anthony M. Zador. Dual Perspectives: Can Artificial Intelligence (AI) Provide a Theoretical Framework For Understanding the Brain or Is It Too Far Removed From Physiology To Be Useful? Society For Neuroscience Annual Meeting. Virtual. (2021)
- Panel Moderator, Shaping AI for good: Canadian AI ecosystem. Women in AI Global Summit, Edmonton, Canada. (2021)
- Do we need to understand the brain before AI can benefit?. ICLR Workshop: “How Can Findings About the Brain Improve AI Systems?” Virtual. (2021)
- Panel Member, Inside Look at Career Journeys in Research AI. WaiTalk Edmonton, Women in AI, Virtual, Canada, (2021)
- Invited Commentary. CIFAR AI + Consciousness Meeting, Virtual, Canada. (2021)
- NLP and machine learning Panel. AICan, Virtual, Canada. (2021)
- Using EEG to Decode Semantics During an Artificial Language Learning Task. Duolingo Research Colloquium, Pittsburgh, United States. (2020)
- Alona Fyshe, Daniel Lizotte. Using AI / ML to Track Mental Health During the Coronavirus Pandemic. Data for Good, Virtual. (2020)
- Convergence: How neural networks and brains represent the world. LTI Colloquium, CMU, Pittsburgh, United States. (2020)
- The Brain’s Representation of Semantics During an Artificial Language Learning Task. NIMH sponsored talk series ”Machine Learning in Brain Imaging, Neuroscience, and Psychology”, Bethesda (Virtual), United States. (2020)

- Neural Language Models. Oxford Machine Learning Summer School, Virtual, Canada. (2020)
- How can brain imaging data guide model training? Montreal AI & Neuroscience (MAIN), Virtual. (2020)
- Machine Learning and the Brain - Research and Clinical Language Examples. Models, Inferences, Algorithms Speaker Series, Broad Institute, Virtual. (2020)
- Deep Learning for Natural Language Processing. Deep Learning Reinforcement Learning Summer School (DRLSS), Edmonton, Canada. (2019)
- General Value Functions for LSTMs. CIFAR Learning in Machines and Brains Program Meeting, Vancouver, Canada. (2019)
- Research in Alberta (Panel). CIFAR Board of Directors Meeting, Calgary, Canada. (2019)
- Finding language (and language learning) in the brain. Kavli Brain Forum, Georgia, United States. (2018)
- Alona Fyshe, Craig Chapman, Jake Stauch. Sponsored session: The Future of VR: Neuroscience and Biosensor Driven Development. Game Developer's Conference, San Francisco, United States. (2018)
- The Emergence of Semantics in Neural Network Representations of Visual Information. Simon Fraser University NLP Seminar, Vancouver, Canada. (2018)
- TGMs to Study Language Composition in the Brain. Towards mechanistic models of meaning composition Symposium, Trondheim, Norway. (2018)
- **Invited Plenary Session:** Data Driven Everything. Cognitive Neuroscience Society Annual Meeting, Boston, United States. (2018) [Video \(talk\)](#) [Video \(debate\)](#)
- Understanding CNNs Using Word Embeddings. West Coast NLP, Organised by Facebook, Menlo Park, United States. (2018)
- Natural Language Processing. AI 4 ALL, Vancouver, Canada. (2018)
- Using Semantic Models to understand CNN Representations. Facebook: West Coast Natural Language Processing (WeCNLP), Palo Alto, United States. (2018)
- **Invited Plenary Tutorial:** Artificial Intelligence. Cognitive Computational Neuroscience, New York, United States. (2017) [Video](#)
- What Does Language Look Like In The Brain? Engineering Institute of Canada / Canadian Society for Senior Engineers (EIC / CSSE), Victoria, Canada. (2016)
- Corpora, Cognition and Composition. Johns Hopkins / University of Maryland Computational Linguistics Institute Seminar. Baltimore, United States. (2016)

PODCAST INTERVIEWS

- Approximately Correct Co-host (2024-Present) [Link](#)
- Understanding computer "brains" and human brains. AI4Society Podcast, (2021)
- Using Brain Imaging to Improve Neural Networks with Alona Fyshe. TWIML (This week in machine Learning) Podcast, (2021)
- Decoding words within phrases. NeLLab Spotlight Podcast, (2021)
- Language and the Brain, with Alona Fyshe. NLP Highlights Podcast (Allen Institute for Artificial Intelligence), (2020)

TALKS FOR THE GENERAL PUBLIC

- Panel Member, President's Speaker Series - Shaping the AI University: Leadership, Policy and the Future of Higher Education. University of Alberta. June 2026
- Panel Member, AI and Education. Edmonton Public Library, June 2025
- Does AI understand you? How would you know if it did? Science Fun Day, University of Alberta. March 2025.
- TED talk (2023) [Link with video](#) **Surpassed 1M views in the first 3 months**
- Destination Canada (2022) [Link with video](#)
- Do computers understand language?. The Walrus Talks Exploration, Calgary (2020) [Video](#)

AWARDS

Name	Period
Canada CIFAR AI (CCAI) Chair (renewed)	2024-2029
Women in AI Awards (North America): AI Researcher of the Year (First Runner-Up)	2022
Canada CIFAR AI (CCAI) Chair	2018-2024
Top 40 under 40 (Edify Magazine)	2020
CIFAR Global Scholar	2016-2018

GRANTS

For large team grants, amount given is what was budgeted for my research group.

Name	Amount	Period
CIFAR Catalyst (Co-PI with Natalie Brito)	\$100,000	2026-2027
CIFAR Learning in Machines and Brains – Fellow	\$210,000	2019-2027
CIFAR Trust and Safety Funding Grant (Co-PI)	\$104,500	2026–2027
CIFAR Catalyst (Co-PI with Marlos Machado and Eilif Muller)	\$100,000	2025-2027
Canada CIFAR AI Chair	\$750,000	2024-2029
NSERC Discovery	\$205,000	2022-2027
CIFAR Catalyst Covid-19 (Co-PI with Dr. Daniel Lizotte)	\$15,000	2020-2021
NFRF-Exploration (Co-PI with Dr. Joel Zylberberg)	\$250,000	2020-2023
SSHRC Partnership (Co-applicant), (\$2.5M total)	\$245,000	2020-2027
Canada CIFAR AI Chair	\$1,300,310	2018-2024
CIFAR Catalyst (Co-PI with Dr. Janet Werker)	\$40,000	2019-2021
CIFAR Catalyst (Co-PI with Dr. Joel Zylberberg)	\$50,000	2018-2020
NSERC Engage Plus	\$25,000	2017
University of Victoria, Internal Research Grant (Co-PI with Dr. Brianna Turner)	\$10,000	2017
CIFAR Catalyst (Co-PI with Dr. Craig Chapman)	\$110,000	2017-2019
NSERC Engage	\$25,000	2016
CIFAR Global Scholar	\$100,000	2016-2018
NSERC Discovery	\$110,000	2016-2022
University of Victoria, Internal Research Grant	\$7,000	2015

SUPERVISION

Unless otherwise indicated, trainees are in the Computing Science Department.

† Psychology/Neuroscience, ‡ Math and Statistical Sciences.

UoA: University of Alberta, UVic: University of Victoria

UNDERGRADUATE	KOYINSOLA TITILOYE	2025	UoA
	TEMI AKINDELE	2025	UoA
	LOGAN BRENNEIS	2025-2026	UoA
	JAMES MCKINNON	2024-2025	UoA
	JIAYIN HE	2024-2025	UoA
	GRACE ZHU	2023-2024	UoA
	JAKE HENNIG	2023-2024	UoA
	PARHAM GOLESTANEH TALAEI	2023-2024	UoA
	CASTOR SHEM	2022-2023	UoA
	NATALIE HANAS†	2021-2023	UoA
	SPENCER VON DER OHE	2020-2021	UoA
	DANIELA TEODORESCU	2020-2021	UoA
	MITCHELL HOLMES†	2020-2022	UoA
	DAVINA KAM†	2019-2020	UoA

UNDERGRADUATE (CONT.)

ADNAN HOUQUE	2019	UoA
JEONG UNG SONG [†]	2019-2021	UoA
STEVE HOFF	2018	UVic
EMILY PIERERA	2017	UVic
ALIX VOORTHUYZEN	2016	UVic
SEBASTIEN GUILLEMONT	2016	UVic
LUKE McLAUREN	2016	UVic
CHRIS COOK	2016	UVic
HAOYAN XU	2016	UVic
SOPHIA CHAN	2016	UVic

MASTER'S

TRISTON GRAYSTON	2026-present	UoA
HASEEB TAHIR	2026-present	UoA
NEGAREH MAHBOUBI	2025-present	UoA
ABRAR FAHIM	2023-2024	UoA
SPENCER VON DER OHE	2021-2023	UoA
CORY EFRID	2021-2024	UoA
DANIELA TEODORESCU	2021-2023	UoA
VARSHINI PRAKASH	2020-2023	UoA
DHRUV MULICK	2020-2022	UoA
SIJIE LING [†]	2020-2022	UoA
CASSIDY PIRLOT [‡]	2019-2022	UoA
DAWN MCKNIGHT	2019-2022	UoA
GARNET LIAM PEET-PARE [‡]	2019-2022	UoA
ROHAN SAHA	2019-2022	UoA
ARCHIT SAKHADEO	2019-2021	UoA
MARYAM HASHEMZADEH	2019-2021	UoA
QINGFENG LAN	2018-2020	UoA
MARYAM HONARI-JAHROMI	2016-2019	UVic
COLE PETERSON	2016-2019	UVic
CHRIS FOSTER	2016-2018	UVic
DHANUSH DHARMARETNAM	2016-2018	UVic

DOCTORAL

DANIELA TEODORESCU	2024-Present	UoA
SIJIE LING	2023-Present	UoA
ROHAN SAHA	2022-Present	UoA
SAEED NAJAFI	2020-Present	UoA

POST DOCTORAL

DOINA-IRINA GIURGEA	2026-Present	UoA
ALEX MURPHY	2022-2024	UoA
THOMAS FERGUSON	2022-2025	UoA
BILAL GHANEM	2021-2022	UoA
RICHARD GERUM	2021-2023	UoA/York
BREA CHOUINARD	2018-Present	UoA
NIKO REBENICH	2016-2017	UVic

HIGH SCHOOL INTERNS	JOHN THOMPSON	2021	UoA
	ARNAV KUMAR	2021	UoA
	WILL HENDERSON	2021	UoA
	DISEN KOTTAGE	2021	UoA
	ANDRIJA IKOVIC	2021	UoA

ACADEMIC SERVICE

Editorial Activities

Associate Editor	Neurons, Brains, Data Analysis and Theory, Journal	2018-Present
Standing Reviewer	Transactions of the ACL, Journal	2017-Present
Associate Editor	PLOS Computational Biology, Journal	2019-2021

Memberships

Member	Edmonton Space and Science Foundation.	2023-present
Member	Royal Society of Canada Working Group on Language and Literacy	2020-2023
Co-Director	SSHRC Partnership Grant	2020-Present
Committee Member	Advanced Computational Neuroscience (Campus Alberta Neuroscience) Advisory Committee	2020-2021
Committee Member	CIFAR EDI committee	2022-2024

Conference/Workshop Organization

Role	Title	Period
Co-organizer	How can we optimally use neuroscience data to guide the next generation of brain models of primate visual and linguistic cognition? (CCNeuro)	2022
Committee Member	Best Paper Committee, North American Chapter of the Association for Computational Linguistics (NAACL)	2022
Mentor	CIFAR Neuroscience of Consciousness Winter School	2022
Co-Organiser	Dynamical Principles of Biological & Artificial Neural Networks, Banff International Research Station (BIRS) Workshop	2022
Lecturer	Neuromatch Academy (Deep Learning)	2022
Committee Member	Steering Committee, CCAI AICan	2020-2021
Area Chair	Neural Information Processing Systems (NeurIPS), Conference	2019-2022
Area Chair	International Conference on Learning Representations (ICLR)	2020, 2022
Senior Area Chair	Association for the Advancement of Artificial Intelligence (AAAI)	2022
Co-Organiser	The Summer Institute on AI and Society, Workshop	2019
Co-organizer	Mind-Machine Links workshop, Workshop	2019
Scientific Committee	Association for the Scientific Study of Consciousness Conference (ASSC)	2019
Co-Area Chair	Empirical Methods in Natural Language Processing (EMNLP)	2017
Area Chair	Women in Machine Learning (WiML, NeurIPS workshop)	2017

Reviewing

Nature Neuroscience, Nature Human Behavior, Nature Communications, Cognition, Neuroimage, Public Library of Science (PLOS), Association for the Advancement of Artificial Intelligence (AAAI), International Conference on Machine Learning (ICML), Neural Information Processing Systems (NeurIPS), Association for Computational Linguistics (ACL), European Chapter of the Association for Computational Linguistics (EACL), North American Association for Computational Linguistics (NAACL), Empirical Methods in Natural Language Processing (EMNLP), Artificial Intelligence

Grant Reviewing

NSERC Discovery, Fonds de recherche du Québec

DEPARTMENT SERVICE

Committee Member	Computing Science EDI Committee	2022-2023
Committee Member	Psychology Undergraduate Awards Committee	2022-2023
Committee Member	Computing Science Graduate Admissions Committee	2019-2024, 2025-Present

UNIVERSITY SERVICE

Scientific Director	Alberta Machine Intelligence Institute	2026-present
Committee Member	Faculty of Science EDI Committee	2020-2024
Committee Member	Amii EDI Committee	2020-2022
Co-chair	Amii Resource Allocation Panel (RAP) Committee	2019-2024
Committee Member	Management Advisory Board, Amii	2019-2024

TEACHING

F: fall semester, W: winter semester, S: summer semester

UNIVERSITY OF ALBERTA	INT-D 461: <i>AI Everywhere Capstone</i>	F2025
	CMPUT 466/566: <i>Intro to Machine Learning</i>	W2021, F2022
	PSYCH 576: <i>ML for Psychology</i>	F2020
	PSYCH 354: <i>Foundations of Cog. Sci.</i>	W2020, W2022, W2023, W2024, W2026
	CMPUT 655: <i>ML and the Brain</i>	F2018, F2019, F2021, F2023
UNIVERSITY OF VICTORIA	SENG 474/CSC 578D: <i>Data Mining</i>	F2018, F2016
	CSC 485/SENG 480/CSC 581: <i>Intro to NLP</i>	S2017
	CSC 106: <i>The Practice of Computer Science</i>	W2017, F2015