# Eva Portelance

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**pronouns:** she/they - elle

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| **ACADEMIC BACKGROUND** | *Ph.D. in Computational Linguistics* <br> Stanford University, Stanford, California | 2017-2023 |

- Ph.D. research on neural network approaches to natural language processing and cognitive science. Co-advised by professor Dan Jurafsky and professor Michael C. Frank.
  *Dissertation title*: Neural Network Approaches to the Study of Word Learning.

*B.A. (Hons.) in Linguistics, Computer Science (minor)*    2014 - 2017
McGill University, Montreal, Quebec

*D.E.C. in Textile Design*    2010 - 2013
CÉGEP du Vieux Montréal, Montreal, Quebec

*Workshops and summer schools*
- Workshop on Computational Grammar Induction, McGill University    2019
- Diverse Intelligences Summer Institute, St. Andrews University    2018

**RESEARCH RELATED EMPLOYMENT**

*Postdoctoral Fellow*    2023 - present
Linguistics, McGill University / Mila - Québec Artificial Intelligence Institute
- Postdoctoral researcher under the supervision of Professors Timothy J. O'Donnell and Siva Reddy. Member of the Montréal Computational and Quantitative Linguistics Laboratory (MCQLL) and the McGill NLP group.
- Researching and helping supervise students studying how to develop natural language understanding in neural networks.

*Scientist-in-Residence*    2023
NextAI
- Research consultant for nine AI-based startups across Canada.
- Helped design and integrate product solutions using large language models, semantic search, diffusion models, and efficient model fine-tuning.

*Research Assistant*    2019 - 2022
The Stanford Natural Language Processing Group
- Research group headed by Professors Chris Manning, Dan Jurafsky, Percy Liang, Chris Potts, Tatsunori Hashimoto, and Monica S. Lam. Part of the Stanford AI Lab.
- Researching algorithms that allow computers to process, generate, and understand human languages.

*Research Assistant*    2018 - 2022
Stanford Language and Cognition Lab
- Research Lab run by Professor Michael C. Frank.
- Using computational and experimental methods to study language acquisition and early cognitive development.

*Research Intern*                                                                    2020
Reinforcement Learning Team, Microsoft Research Montreal
- Mentored by Dr. Romain Laroche.

- Studying language emergence in neural multi-agent communication.

**HONORS AND**  *Graduate*
**AWARDS**
- SSHRC Doctoral Fellowship                                                 2018 - 2022

- Stanford Alumni Community Impact Award                                          2021

- Diverse Intelligences Summer Institute Fellowship                              2018

- Joseph-Armand Bombardier Canada Graduate Scholarship (declined)    2017

- Rhodes Scholarship Finalist                                                   2017

*Undergraduate*
- Dean's Honour List, McGill University                              2015, 2016, 2017

- U2 Academic Achievement Award, McGill Linguistics Department            2016

- Arts Research Internship Award, McGill University                           2016

- Internship Award *txtLab@McGill*                                      2015, 2016

- Regroupement des fondations collégiales de Montréal Scholarship          2013

- Highest Academic Achievement Award, CÉGEP du Vieux Montréal 2012, 2013

**PUBLICATIONS**  *Manuscripts under review*

**Portelance, E.**, M. C. Frank, D. Jurafsky. (2023). Learning the meanings of function words from grounded language using a Visual Question Answering model. (Manuscript)

*Refereed journal papers*

**Portelance, E.**, Y. Duan, M. C. Frank, G. Lupyan. (To Appear). Predicting age of acquisition for children's early vocabulary in five languages using language model surprisal. *Cognitive Science*.

**Portelance, E.** and A. Piper. (2016). How Cultural Capital Works: Prizewinners, Bestsellers, and the Time of Reading. *Post-45*.

*Refereed conference proceedings*

**Portelance, E.**, M. C. Frank, D. Jurafsky, A. Sordoni, R. Laroche. (2021). The Emergence of the Shape Bias Results from Communicative Efficiency. *Proceedings of the 25th Conference on Computational Natural Language Learning (CoNLL)*.

**Portelance, E.**, J. Degen, M. C. Frank. (2020). Predicting Age of Acquisition in Early Word Learning Using Recurrent Neural Networks. *Proceedings of CogSci 2020*.

**Portelance, E.** (2020). Genuine Verb stranding VP-ellipsis in Lithuanian. *Proceedings of the 50th Annual Meeting of the North East Linguistic Society (NELS 50)*.

*Book chapters*

Potts, C., T. Icard, **E. Portelance**, D. Card, K. Zhou, J. Etchemendy. (2021). Philosophy of Understanding. In *On the Opportunities and Risks of Foundation Models.*, Ed. by the Center for Research on Foundation Models (CRFM) at Stanford University. arXiv:2108.07258.

*Technical reports*

> **Portelance, E.**, A. Bruno, L. Bergen, T. J. O'Donnell. (2019). Grammar Induction for Minimalist Grammars using Variational Bayesian Inference. *arXiv*:1710.11350

> Harasim, D., A. Bruno, **E. Portelance**, T. J. O'Donnell. (2018). A generalised parsing framework for Abstract Grammars. *arXiv*:1710.11301

**TALKS**

*Invited talks*

- **Portelance, E.** (2021). *Learning Strategies for the Emergence of Language in Iterated Learning.* Presentation at the Montreal Computational & Quantitative Linguistics Lab (MCQLL), McGill University.

- **Portelance, E.** (2020). *Emergent communication in multi-agent neural networks.* Presentation at the Reinforcement Learning Group, Microsoft Research (Redmond, Cambridge, New York, Montreal), Virtual.

- **Portelance, E.** (2019). *Verb stranding ellipsis in Lithuanian: verbal identity and head movement.* Presentation at the Syntax & Semantics circle, University of California, Berkeley.

*Conference presentations*

- **Portelance, E.**, M. C. Frank, D. Jurafsky, A. Sordoni, R. Laroche. (2021). *The Emergence of the Shape Bias Results from Communicative Efficiency.* Presentation at the Conference on Empirical Methods in Natural Language Processing (EMNLP)/ Conference on Natural Language Learning (CoNLL), Punta Cana, DR.

- **Portelance, E.**, J. Degen, M. C. Frank. (2020). *Predicting Age of Acquisition in Early Word Learning Using Recurrent Neural Networks.* Presentation at CogSci, Virtual.

- **Portelance, E.**, J. Degen, M. C. Frank. (2020). *Using neural network language models to predict age of acquisition for early vocabulary.* Presentation at the International Conference for Infant Studies, Virtual.

- **Portelance, E.**, G. Kachergis, M.C. Frank. (2019). *Comparing memory-based and neural network models of early syntactic development.* Poster presentation at the Boston University Conference on Language Development, Boston, MA.

- **Portelance, E.** (2019). *Genuine Verb stranding VP-ellipsis in Lithuanian.* Presentation at the 50th Annual Meeting of the North East Linguistic Society, Cambridge, MA.

- **Portelance, E.**, A. Bruno, D. Harasim, L. Bergen, T. J. O'Donnell. (2018). *A Framework for Lexicalized Grammar Induction Using Variational Bayesian Inference.* Poster presentation at the Learning Language in Humans and Machines conference, Paris.

- **Portelance, E.** (2018). *On the move: Free word order in Lithuanian.* Presentation at the Association for the Advancement of Baltic Studies Conference. Stanford.

- **Portelance, E.**, A. Bruno, and T. J. O'Donnell. (2017). *Unsupervised induction of natural language dependency structures.* Poster presentation at the Montreal AI Symposium, Montreal.

- **Portelance, E.** and A. Piper. (2017). *Understanding Narrative: Computational approaches to detecting narrative frames.* Poster presentation at the Digital Humanities Conference. Montreal.

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| **TEACHING MENTORING** | *McGill University* | |
| | Instructor for *Computational Linguistics* | Fall 2023 |

  – Cross-coded graduate and undergraduate course in Linguistics and Computer Science
  – Covers the foundations of computational linguistics, the Chomsky hierarchy, probabilistic inference, and applied approaches to grammar induction.

*Stanford University*

Consultant for *Software and Services for Data Science (SSDS)*　　2019 - 2022

  – Held weekly walk-in hours for programming and statistics consultations for all members of the Stanford community.
  – Prepared and taught workshops on code reproduciblility, code reusability, and an introduction to functional programming.

Mentor for the Symbolic Systems undergraduate RA Program　　2021

  – Advised RAs and taught them about the research process from start to finish.

Mentor for CS Undergraduate Mentoring Program　　AY 2020-2021

  – Mentored female students in Computer Science considering graduate school and careers in research and development.

TA for *Introduction to Linguistics* with Katherine Hilton　　Fall 2020

  – Prepared and taught weekly labs with hands-on exercises and group activities for two class subgroups.

TA for *Introduction to Psycholinguistics* with Judith Degen　　Fall 2019

  – Prepared and taught guest lectures on language acquisition and research methodologies: corpus, experimental, and computational model studies.

Corpus TA　　AY 2018 - 2019

  – Managed all NLP corpora available at Stanford and consulted with students and researchers about their access, best usage cases, and licensing.

*McGill University (undergraduate)*
TA for *Syntax 1* with Junko Shimoyama　　Winter 2016

**ACADEMIC SERVICE**

- Cognitive Science Seminar Administrator　　2019 - 2022
- Graduate Student Representative　　AY 2019 - 2020
- Colloquium committee　　AY 2018 - 2019
- Editor on *Formal Approaches to Slavic Linguistics 27* proceedings 2018 - 2019
- Graduate Studies Committee　　2018
- Friday Social Committee　　AY 2017 - 2018

**LANGUAGES**　　English (native), French (native), Lithuanian (intermediate), Spanish (intermediate), Russian (beginner/for research)