

Education

- 2021– **Ph.D**, *Carnegie Mellon University*, Pittsburgh
School of Computer Science, Language Technologies Institute
Advisor: Graham Neubig
- 2016–2021 **B.Sc**, *University of Toronto*, Toronto
Computer Science & Cognitive Science

Publications

Journal Articles

- [11] Yang Xu*, **Emmy Liu***, and Terry Regier. “Numeral Systems across Languages Support Efficient Communication: From Approximate Numerosity to Recursion”. In: *Open Mind* 4 (2020), pp. 57–70.

Conference Articles

- [4] **Emmy Liu**, Chenxuan Cui, Kenneth Zheng, and Graham Neubig. “Testing the Ability of Language Models to Interpret Figurative Language”. In: *Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*. Seattle, United States: Association for Computational Linguistics, July 2022, pp. 4437–4452. DOI: 10.18653/v1/2022.naacl-main.330. URL: <https://aclanthology.org/2022.naacl-main.330>. **(Oral)**.
- [5] **Emmy Liu** and Graham Neubig. “Are Representations Built from the Ground Up? An Empirical Examination of Local Composition in Language Models”. In: Abu Dhabi, UAE: Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing, Dec. 2022.
- [8] Aida Ramezani*, **Emmy Liu***, Jr. Renato Ferreira Pinto, Spike W.S. Lee, and Yang Xu. “The Emergence of Moral Foundations in Child Language Development”. In: vol. 44. Toronto, Canada: Proceedings of the Annual Meeting of the Cognitive Science Society, July 2022. **(Oral)**.
- [10] **Emmy Liu** and Yang Xu. “Chaining and the Process of Scientific Innovation”. In: vol. 42. Toronto, Canada: Proceedings of the Annual Meeting of the Cognitive Science Society, 2020, pp. 1639–1646.
- [13] **Emmy Liu** and Yang Xu. “Rapid information gain explains cross-linguistic tendencies in numeral ordering”. In: vol. 41. Montreal, Canada: Proceedings of the Annual Meeting of the Cognitive Science Society, 2019, pp. 2166–2173.

Workshops & Posters

- [1] Sedrick Scott Keh, Rohit K. Bharadwaj, **Emmy Liu**, Simone Tedeschi, Varun Gangal, and Roberto Navigli. “EUREKA: EUphemism Recognition Enhanced through kNN-based methods and Augmentation”. Abu Dhabi, UAE, 2023.

- [6] **Emmy Liu**, Michael Henry Tessler, Nicole Dubosh, Katherine Hiller, and Roger Levy. “Assessing Group-level Gender Bias in Professional Evaluations: The Case of Medical Student End-of-Shift Feedback”. In: *Proceedings of the 4th Workshop on Gender Bias in Natural Language Processing (GeBNLP)*. Seattle, United States: Association for Computational Linguistics, 2022, pp. 86–93.
- [9] Nayan Saxena, Pan Chen, and **Emmy Liu**. “Statistical Consequences of Duelling Bandits”. In: *EDM21 Workshop on Reinforcement Learning for Education*. Virtual, 2021. (Spotlight).
- [12] **Emmy Liu** and Yang Xu. “Ordering in numerals supports rapid information processing”. In: *32nd CUNY Conference on Human Sentence Processing*. Boulder, United States, 2019.

Manuscripts & In Submission

- [2] Andy Liu, Hao Zhu, **Emmy Liu**, Yonatan Bisk, and Graham Neubig. “Computational Language Acquisition with Theory of Mind”. in submission. 2023.
- [3] Mohi Reza, Angela Zavaleta Bernuy, **Emmy Liu**, Tong Li, Calista Barber, Zhongyuan Liang, and Joseph Jay Williams. “Exam Eustress: Designing a Brief Online Intervention for Helping Students Identify Positive Aspects of Stress”. in submission. 2023.
- [7] **Emmy Liu** and Yang Xu. “Regularity in the Temporal Dynamics of Publishing Behaviour across Scientists”. in submission. 2022.

Experience

2018–2019 **Associate Engineer**, *Wattpad*, Toronto

Contributed large web features and new data science experiments through a year-long internship (through undergrad internship program)

- Independently rebuilt major parts of frontend web app serving 65+ million monthly users, including Home page, tag (explore) pages, and onboarding
- Implemented data science experiments in content recommendations and rankings affecting millions of users

2018–2021 **Research Assistant**, *Cognitive Lexicon Laboratory*, University of Toronto

Worked on computational linguistics research, especially efficient communication.

2020–2021 **Research Assistant**, *Intelligent Adaptive Interventions Laboratory*, University of Toronto

Worked on human-computer interaction research, especially adaptive interventions with bandits.

June–Aug 2020 **Research Assistant**, *Computational Psycholinguistics Laboratory*, MIT

Worked on examining gender bias with language models.

Service

- (2022 –) LTI Mentoring Program, **Mentor**
- (2021 –) SCS PhD Dean’s Advisory Committee, **Social Working Group**: Organizing social events for PhD students
- (2021) CMU Graduate Application Support, **Mentor**: Mentoring applicants from underrepresented groups

- (2019 – 2021) **Chief Editor**, Review of Undergraduate Computer Science: Reviewing papers for undergrad CS journal and holding research events
- **Reviewer**, EMNLP (2022), CogSci (2020, 2021), MemARI Workshop @ Neurips (2022)

Teaching

Fall 2022 CMU 11-711 (Advanced NLP), Teaching Assistant

Research Mentoring

- Nayan Saxena, Pan Chen
 - *Statistical Consequences of Duelling Bandits*
- Andy Liu
 - *Computational Language Acquisition with Theory of Mind*

Awards

- (2021 – 2022) CMU ASA Presidential Fellowship
- (2021) NSERC USRA