ZACHARY YANG

RSTZZZ | zachary-y-647209103 | zachary.yang@mail.mcgill.ca

EDUCATION

Doctoral of Computer Science, McGill University — Ongoing
Relevant Courses: Natural Language Understanding with Deep Learning

Master of Computer Science, McGill University — 2020 - 2022
Relevant Courses: Network Science, Distributed Systems, Natural Language Processing, Applied Machine Learning

Honours Bachelor of Computer Science, University of Toronto — 2015 - 2019
Co-operative Program in Software Engineering Stream | Graduated with High Distinction | Dean's List for all years

HIGHLIGHTED REFEREED PUBLICATIONS

Game On, Hate Off: A Study of Toxicity in Online Multiplayer Environments, Z.Yang, N. Grenon-Godbou, R. Rabbany. In the proceedings of the *ACM Games: Research and Practice, 2024*

Towards Detecting Contextual Real-Time Toxicity for In-Game Chat, Z.Yang, N. Grenon-Godbou, R. Rabbany. In the proceedings of *Findings of the Association for Computational Linguistics: EMNLP 2023*

Unveiling Identity Biases in Toxicity Detection : A Game-Focused Dataset and Reactivity Analysis Approach, J. Van Dorpe, Z.Yang, N. Grenon-Godbou, W. Grégoire. In the proceedings of *Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP): Industry Track*

Online Partisan Polarization of COVID-19, Z.Yang, A. Imouza, K. Pelrine, S. Levy, J. Liu, G. Desrosiers-Brisebois, J. Godbout, A. Blais, R. Rabbany. In the proceedings of *2021 IEEE International Conference on Data Mining Workshops on Social Data Mining in the Post-pandemic Era (ICDMW-SDM) pp.893-901, IEEE 2021*

REFEREED PUBLICATIONS

An Evaluation of Language Models for Hyperpartisan Ideology Detection in Persian Twitter, S. Omidi Shayegan, I. Nejadgholi, K. Pelrine, H. Yu, S. Levy, Z.Yang, J. Godbout, R. Rabbany. In the proceedings of the *2nd Workshop on Resources and Technologies for Indigenous, Endangered and Lesser-resourced Languages in Eurasia (EURALI) @ LREC-COLING, 2024*

Party Prediction for Twitter, K. Pelrine, A. Imouza, Z.Yang, G. Desrosiers-Brisebois, S. Levy, J. Tian, , C Amadoro, A. Blais, J. Godbout, R. Rabbany. In the proceedings of *International AAAI Conference on Web and Social Media, 2024*

When does Continuous Learning for BERT make sense?, Z.Yang. In the proceedings of *Proceedings of the Canadian Conference on Artificial Intelligence, 2023*

OPPVIS: Visualizing Online Partisan Polarization of COVID-19, Z.Yang, A. Imouza, K. Pelrine, S. Levy, J. Liu, G. Desrosiers-Brisebois, J. Godbout, A. Blais, R. Rabbany. In the proceedings of *2021 IEEE Visualization & Visual Analytics (VIS 2021), IEEE, 2021*

PUBLICATIONS UNDER REVIEW

Web Retrieval Agents for Evidence-based Misinformation Detection, J. Tian, H. Yu, Y. Orlovskiy, M. Rivera, Z.Yang, J. Godbout, K. Pelrine. Submitted to *COLM, 2024*

OTHER PUBLICATIONS

Game On, Hate Off: A Study of Toxicity in Online Multiplayer Environments, Z.Yang, N. Grenon-Godbou, R. Rabbany. Presentation in *Ethical Games Conference, 2024*

Open, Closed, or Small Language Models for Text Classification, Z.Yang, Y. Hao, K. Pelrine, J. Godbout, R. Rabbany. Preprint published on *ArXiv, 2023*

ToxBuster: In-game Chat Toxicity Buster with BERT, Z.Yang, Y. Maricar, M. Davari, N. Grenon-Godbou, R. Rabbany. Preprint published on *ArXiv, 2023*

COVID-19 Partisan Polarization and Toxicity, Z.Yang, K. Pelrine, A. Imouza, G. Desrosiers-Brisebois, S. Levy, J. Tian, J. Godbout, R. Rabbany. Poster presented at *McGill School of Computer Science 50th Anniversary, 2022*

Activity Based Party Prediction for Twitter, K. Pelrine*, A. Imouza* , G. Desrosiers-Brisebois*, S. Levy*, J. Tian*, Z. Yang*, A. Feizi*, A. Blais, JF. Godbout , R. Rabbany. In the *American Political Science Association Meeting (APSA), 2022*

Ebbs and Flows of Polarization During a Political Campaign, K. Pelrine, A. Imouza, G. Desrosiers-Brisebois, Z.Yang, S. Levy, A. Feizi, J. Liu, A. Blais, J. Godbout, R. Rabbany. In the *American Political Science Association Meeting (APSA), 2021*

EXPERIENCE

NLP R&D Scientist May 2022 - August, 2023
Ubisoft La Forge *Montreal, QC*

- Spearheaded the advancement of toxicity detection algorithms, resulting in a **significant improvement (+43%)** in the F1-score, and established **industry-leading player content safety systems**
- Pioneered an unsupervised learning project through integrated active learning and human-in-the-loop methodologies, advancing the **trust and safety strategy important to chat moderators**.
- Research on detecting and preventing toxicity within in-game chat using language models, with **two papers in EMNLP 2023** and a **presentation in Ethical Gaming 2024**.

Graduate Research Jan 2021 - Present
Complex Data Lab *Montreal, QC*

- Developed **scalable** classifiers and tools using machine learning and data mining techniques to measure partisan polarization for **large-scale data (over 80K users and 30M posts)**
- **Collaborated with cross-domain research teams** to correlate this measure with existing COVID-19 epidemiology data and political events to investigate the potential causes and impacts of polarization
- Designed the first text-based measurement of partisan polarization on social media in the context of COVID-19 across time and between states in the United States and Canada, resulting in **one paper in ICDMW**, one presentation at McGill and **one paper in IEEE VIS**.

OTHER EXPERIENCE

DevOps Engineer (Ministry of Education, *Toronto, ON*) Jan 2018 - Sep 2020

IT QA (Ministry of Education, *Toronto, ON*) Sep 2016 - Dec 2017

SKILLS

Programming Languages	Python 3, C#, Java
ML Packages	HuggingFace, PyTorch, Numpy, Pandas, NLTK, Sklearn, Bokeh, Scipy, SpaCy
DB	Oracle, PostgreSQL, MongoDB, Firebase
Version Control	Azure, TFS, GitHub, GitLab
Scripting	PowerShell, Batch, Linux
Soft Skills	Time Management, Problem-solving, Attention to Detail, Adaptability

TEACHING ASSISTANT EXPERIENCE

Programming Languages and Paradigms (Sep 2020 - April 2021) *Algorithms and Data Structures* (Sep 2020 - Dec 2020)