

# RACHEL KIM

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## Education

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### University of Toronto

Toronto, ON, Canada

*Honours B.Sc.: Computer Science Specialist, Mathematics Major*

Sep 2020 - Jun 2024

- cGPA: 3.94 / 4.00
- Select Computer Science Courses: Algorithms for Private Data Analysis (Graduate Course), Algorithm Design, Analysis and Complexity, Artificial Intelligence, Databases, Machine Learning, Algorithmic Game Theory and Mechanism Design, Enriched Data Structures and Analysis
- Select Mathematics Courses: Analysis I and II, Probability and Statistics I, Algebra I and II

## Research Experience

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### Computational Social Science Lab, University of Toronto

Toronto, ON, Canada

*Research Assistant*, advised by Professor Ashton Anderson

Jun 2021 - Present

- Research Project: Quantifying Public Discourse on Policy Issues, with a case study on Universal Basic Income (UBI) on Reddit
- Extracting Reddit comments' stances on policy issues and leveraging topic modelling to discover key concerns within a policy issue
- Applying Reddit community embeddings to quantify the impact of a community's age, gender, partisan leaning, and affluence levels on opinions and discussions surrounding a policy
- Processing and analyzing a dataset of > 1 million Reddit comments in Python using jupyter, pandas, pyspark, nltk, gensim, Hugging Face transformers, and langchain; visualizing data using matplotlib, seaborn

### Department of Computer Science, University of Toronto

Toronto, ON, Canada

*Research Assistant*, advised by Professor Peter Marbach

May 2023 - Aug 2023

- Research Project: Understanding Influence on Social Media
- Applied and tested a pre-existing theoretical model of communities, their structural properties, and influence on real-world Twitter data
- Leveraged clustering algorithms, principal component analysis, and statistical tests
- Processed and analyzed a MongoDB database of > 100,000 tweets in Python; visualized data using matplotlib, seaborn

### BMO Lab, University of Toronto

Toronto, ON, Canada

*Machine Learning Research Assistant*

Oct 2020 - Mar 2021

- Contributed to research efforts in the intersection between art, performance, emerging technologies, and artificial intelligence (AI)
- Read and summarized research papers on in BigGAN, CLIP, and DALL-E
- Preprocessed and cleaned play scripts using regex; performed experiments using pytorch

## Publications

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### Non-Archival Venues

Quantifying Public Discourse on Policy Issues: A Case Study of Universal Basic Income Discussions on Reddit

Rachel Kim, Veniamin Veselovsky, Ashton Anderson

Oral Presentation at the *International Conference on Computational Social Science (IC2S2)*, Jul 2022

Assessing the Impacts of COVID-19 on Reddit

Veniamin Veselovsky, Rachel Kim, Ashton Anderson

Oral Presentation at the *International Conference on Computational Social Science (IC2S2)*, Jul 2022

## Working Papers

Quantifying Public Discourse on Policy Issues: A Case Study of Universal Basic Income Discussions on Reddit

Rachel Kim, Veniamin Veselovsky, Ashton Anderson

*In preparation.*

## Awards

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- The Marion Edith Binning Scholarship (\$1,000 CAD), University of Toronto, 2023
  - Natural Sciences and Engineering Research Council of Canada (NSERC) Undergraduate Student Research Award (USRA) (\$7,500 CAD), NSERC, 2023
  - The Robert C. Dowsett Scholarship (\$1,000 CAD), University of Toronto, 2022
  - The Professor R. K. Arnold Scholarship (\$1,000 CAD), University of Toronto, 2021
  - Laidlaw Undergraduate Research and Leadership Scholarship (\$10,000 CAD), Laidlaw Foundation, 2021
  - C. David Naylor Scholarship (\$20,000 CAD), University of Toronto, 2020
  - President's Scholar of Excellence (\$10,000 CAD), University of Toronto, 2020

## Teaching Experience

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**Department of Computer Science**, University of Toronto Toronto, ON, Canada  
*Teaching Assistant*, CSC258: Computer Organization Jan 2023 - Apr 2023

- Taught a curriculum including digital logic circuits, memory storage devices, and machine languages
- Supervised and aided > 30 students in weekly labs and marked lab reports, tests, and exams

## Industry Experience

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**TELUS** Toronto, ON, Canada  
*Software Development Intern*, Architecture Practice Enablement (ArchPE) Team Sep 2022 - Dec 2022

- Automated KPI calculations and dashboards through Google Data Studio and JavaScript, saving > 1 month of time across the ArchPE Team
- Added capabilities to Backstage software templates used internally by > 50 teams using JavaScript, Docker, Google Cloud Platform (GCP), and Git
- Designed and developed APIs using Postman and PHP

## Community Involvement

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**Computer Science Undergrad Affairs Committee**, University of Toronto Toronto, ON, Canada  
*Student Representative* Sep 2022 - Present

- Representing the undergraduate voice in weekly meetings discussing academic policy and services that impact > 1,200 students with professors and departmental staff

**makesense Mexico** Mexico City, Mexico  
*Project Management Leader* Jul 2022 - Aug 2022

- Worked with Nidaria, an organization in Mexico City that collects organic waste from customers' homes and converts it into farm animal feed for local farmers
- Recruited and co-led a group of seven volunteers to interview customers, created a video on Nidaria's impact, and hosted a Sustainability Festival with an attendance of > 40
- Succeeded in getting an additional 43% of the existing customer base to indicate high interest in subscribing to Nidaria

**Computer Science Student Union**, University of Toronto Toronto, ON, Canada  
*Director of Academic Events* Sep 2020 - May 2022

- Led events like tea time with professors, research seminars, and study sessions for > 1,200 computer science students

**World University Service of Canada, University of Toronto**

Toronto, ON, Canada

*Social Media Coordinator*

Sep 2020 - Apr 2022

- Supported the acclimation to Canada for two refugee students as they started their studies at the University of Toronto
- Raised awareness of refugee and education issues

**Compassion Korea**

Remote

*Korean-English Translator Volunteer*

Sep 2017 - Apr 2021

- Translated letters between sponsors and sponsored children weekly from Korean to English and vice versa