Ethan Baron

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Education

1. **University of Toronto** — Toronto, Canada
   BASc in Engineering Science (in progress) — Sep 2019 - Apr 2024

   - Cumulative GPA: 3.98 / 4.00
   - Major: Machine Intelligence
   - Thesis Supervisor: Prof. Scott Sanner

Employment

1. **Zelus Analytics**
   Associate Data Scientist (part-time) — Sep 2023 - Present
   Data Scientist Intern (under Dr. Luke Bornn) — May 2022 - Aug 2023

   - Develop, validate, and productionalize statistical and machine learning models of player and team performance in sports

2. **Ghent University**
   Freelance Research Assistant (under Prof. Matthias Bogaert) — Feb 2023 - Jun 2023

   - Developed and validated collaborative filtering approach to road cycling race prediction based on historical race results

3. **University of Toronto Applied Optimization Lab**
   Research Assistant (under Prof. Timothy Chan) — May 2021 - Apr 2022

   - Developed Bayesian hierarchical generative model to propose novel shooting skill metric for soccer players based on in-game shot trajectories

4. **University of Toronto Transportation Research Institute**
   Research Assistant (under Prof. Eric Miller) — May 2020 - Apr 2021

   - Developed statistical and machine learning spatial models of real estate prices and post-secondary school location choice

Publications and Presentations

Journal Papers

1. **Ethan Baron**, Nathan Sandholtz, Devin Pleuler, and Timothy C. Y. Chan. Miss it like Messi: Extracting value from off-target shots in soccer. *Journal of Quantitative Analysis in Sports*, Jan 2024. doi:10.1515/jqas-2022-0107

Conference Proceedings

1. **Ethan Baron**, Bram Janssens, and Matthias Bogaert. Bike2Vec: Vector embedding representations of road cycling riders and races. In *10th MathSport International Conference Proceedings*, Jun 2023. URL: https://github.com/baronet2/Bike2Vec

2. **Ethan Baron**, Gonzalo Martinez Santos, and Eric J. Miller. Modelling GTHA post-secondary school location choice. In *Transportation Association of Canada Conference and Exhibition*, Oct 2021. URL: https://www.tac-atc.ca/sites/default/files/conf%5Fpapers/barone%5Fmodellinggthapost-secondaryschoollocationchoice.pdf

Working Papers

1. Anton Korikov, George-Kirollos Saad, **Ethan Baron**, Mustafa Khan, Manav Shah, and Scott Sanner. Aspect-based fusion for reviewed-item retrieval with multiaspect natural language queries

Conference Presentations

1. Bike2Vec: Vector embedding representations of road cycling riders and races. 10th MathSport International Conference, Budapest, Hungary, Jun 2023

2. Miss it like Messi: Extracting a signal from off-target shots in soccer. Canadian Operational Research Society Annual Conference, Vancouver, Canada, Jun 2022

3. Modelling average dwelling value of Toronto dissemination areas. North American Regional Science Council, Virtual, Nov 2021

4. Predictive value of off-target shots in soccer. New England Symposium on Statistics in Sports, Virtual, Oct 2021. URL: https://www.youtube.com/watch?v=zQCl1cL-JxAs

5. Modelling GTHA post-secondary school location choice. Transportation Association of Canada Conference and Exhibition, Virtual, Sept 2021

Reports

1. **Ethan Baron**, Daniel Hocevar, Kabir Malik, and Aaron White. RIPP: Holistic player evaluation with region-based isolated player performance. Technical report, Big Data Cup (hockey analytics competition), Jul 2022. URL: `https://github.com/baronet2/RIPP/blob/master/Paper%20Submission.pdf`

2. **Ethan Baron** and Eric Miller. Modelling average dwelling value of Toronto dissemination areas. Technical report, University of Toronto Transportation Research Institute, Apr 2021. URL: `https://tmg.utoronto.ca/files/Reports/DAAverageDwellingValueReport.pdf`

Research Funding

1. Undergraduate Summer Research Award ($6,000), Natural Sciences and Engineering Research Council, Jul 2021

2. Engineering Science Research Opportunities Program Fellowship ($3,000), University of Toronto Division of Engineering Science, May 2020

Awards

1. Kathryn Jean Poole In-Course Scholar ($1,500), University of Toronto, Aug 2022

2. Winner, Student Category, Big Data Cup (hockey analytics competition), Jul 2022

3. Best Undergraduate Student Paper, Canadian Operational Research Society, Jun 2022

4. C. David Naylor University Scholarship ($20,000), University of Toronto, Sep 2019

Extracurricular Activity

1. **University of Toronto Sports Analytics Student Group**
   President — Apr 2021 - Apr 2023

   - Oversaw executive team, recruitment, newsletter, and email communications
   - Led and supervised research projects on various sports, including 2022 Big Data Cup winning submission

   Executive Team Member — Aug 2020 - Present

   - Planned and executed sports analytics presentations and data science tutorials