

# Sourav Biswas

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## Experience

**University of Waterloo** – *Research Assistant* Waterloo, Ontario • Sep 2019 – Present

- Implementing practical differentially private algorithms for statistical estimation

**Wish** – *Software Engineer Intern* San Francisco, California • Jan 2019 – Apr 2019

- Saved **\$2 million/year** by enhancing order refund tools to prevent incorrect refunds
- **Lowered repeat customer support cases 27%** by improving server logic, cutting support costs
- Cut runtime for backfilling crons from **12 hours to 15 minutes** by optimizing database queries/partitions
- Cleared **over 75 million** unused customer support inquiries daily using Python crons
- **Reduced audit times over 67%** by enhancing web based internal tools to support hotkeys

**BMO Capital Markets** – *Quantitative Analyst* Toronto, Ontario • Apr 2018 – Aug 2018

- Yielded a credit positive for BMO by developing the blockchain platform used in the **first blockchain bond issuance in Canada** – featured on Bloomberg, CoinDesk & Financial Post
- Built machine learning models to predict demand for US treasury bonds with Python & Scikit-Learn
- Created VueJS data visualization models for institutional clients to analyze the Canadian bond market
- **Reduced loading times by 97%** by improving web socket infrastructure & simplifying network calls
- Automated emails using C# scripts and job schedulers, **saving hours of manual work**

**Sir John A. Macdonald S.S.** – *Computer Science Instructor* Waterloo, Ontario • Jun 2016 – Jun 2017

- **Improved class attendance by 40%** (50 to 70 students) through restructuring curriculum

## Projects

**Computer Vision Weightlifting Coach**

- Implemented a Python application to analyze weightlifting videos frame by frame & detect bad posture
- Designed a Ridge regression model feeding data from MPII pose estimation with OpenCV

**SumNotes**

- Created a web app that autonomously takes summarized notes in lectures or meetings
- **Won Hack the North 2017** – Best Use of Cockroach Database (\$1000 Prize)

**BlockChainge**

- Built a full stack decentralized fundraising platform on Ethereum for donations & crowdsourcing
- **Reduced donation fees by 99%** compared to traditional platforms

**NBA Predictive Analytics**

- Created a data visualization tool to help coaches detect areas of the court to prioritize defense
- Simulated NBA players' shooting strengths with machine learning using K-Nearest Neighbours

## Education

**University of Waterloo** – *Bachelors of Computer Science* Sep 2017 – Aug 2022

- Cumulative GPA: 91/100 – Dean's Honours List

**Wilfrid Laurier University** – *Bachelors of Business Administration (Finance Major)* Sep 2017 – Aug 2022

- Cumulative GPA: 91/100 – Dean's Honours List

## Skills

Python, Java, C, C++, C#, HTML/CSS, JavaScript (Node, jQuery, Vue, React), Git, Linux, Scheme, SQL, MongoDB, Scikit-Learn, Pandas, Matplotlib, R, Jupyter Notebook, OpenCV, Bloomberg

## Awards

**Schulich Leader Scholarship** – Offered \$80 000 by Western University for STEM leadership

**René Descartes National Scholarship** – Awarded \$25 000 by University of Waterloo for math merit

**Governor General's Academic Medal** – Ranked 1<sup>st</sup> out of 250 students in academic standing

**ECOO Programming Provincial Finals** – Placed top 10 out of 400+ teams across Ontario

**Galois Math Contest** – Ranked top 30 internationally out of 7000+ contestants (top 0.5%)