# Suraj Bansal

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## Education —

### Bayview Secondary School
*International Baccalaureate Diploma*

Richmond Hill, Ontario
*September 2017 - Present*

- **Relevant Courses -** Chemistry (HL), Economics (HL), English (HL), Biology (SL), Calculus (SL), French (SL), Theories of Knowledge (SL), Extended Essay (Computer Science): Emerging quantum cryptography and encryption systems
- **Academic Performance -** Honour Roll (2017 - Present). Current Grade 12 Average: 97%
- **Alternative Coursework and Certification -** Harvard CS50 (edX), Johns Hopkins Public Health in Humanitarian Crises 2 (Coursera), Stanford Machine Learning (Coursera), Johns Hopkins Genomic Data Science (Coursera), Penn Data Structures and Software Design (edX) UC Berkeley Quantum Mechanics, Quantum Computation (edX), Caltech Quantum Cryptography (edX), Penn Computational Thinking for Problem Solving (Coursera), Penn The Business of Health Care Specialization (Coursera), Johns Hopkins Genomic Data Science Specialization (Coursera)
- **Activities and Societies -** Bayview Student Council Elected Grade 9 Representative, Bayview DECA Trainer, Bayview FBLA Trainer, Bayview Public Speaking Junior Executive, and Trainer

## Work Experience —

### The Pugh Lab, PM-OICR Translational Genomics Cancer Laboratory, UHN
*Student Researcher*

Toronto, Ontario
*October 2020 - Present*

- Conducting high-resolution examinations of tumour DNA, RNA, and epigenetic marks from primary tumour biopsies and developing bioinformatic tools to support clinical laboratory workflows
- Advancing the development of CReSCENT (crescent.cloud) — a containerized, web-based, pipeline execution engine for standardized analysis of single-cell RNA sequencing data including normalization and cell clustering

### The John Dick Lab, Princess Margaret Cancer Centre, UHN
*Research Intern*

Toronto, Ontario
*September 2020 - Present*

- Profiling tumour microenvironments using single-cell transcriptome sequencing to identify prognostic biomarkers and develop targeted therapeutics for Acute Myeloid Leukemia through comprehensive genomic characterization
- Applying machine learning approaches to map tumour characteristics to genetic mechanisms and identify patient groups from their clinical signatures to quantitatively assess drug effectiveness in Acute Myeloid Leukemia

### Baylor Scott and White Health
*Summer Intern*

Dallas, Texas
*August 2019*

- Shadowed physician rounds working in fields of trauma, hematology, and internal medicine in both the hospital and out-patient clinic environment at Texas' largest healthcare system in downtown Dallas

### The Grover Lab, St. Michael's Research Centre
*Keenan Research Summer Student*

Toronto, Ontario
*June 2019 - July 2019*

- Assisted with research on the transfer of endoscopic skills with an endoscopic simulation curriculum using EndoVR (CAE Healthcare) — a high-fidelity interventional virtual reality endoscopic simulator
- Supported UofT Medical residents (course participants) in troubleshooting difficulties with the virtual reality system, assisting with data entry tasks, patient roleplay, and reporting simulation-collected performance metrics

## Featured Projects —

### Ryde AI
*Project Lead, Software Developer, and Co-Founder*

Toronto, Ontario
*April 2020 - Present*

- Currently developing open-source self-driving software, leveraging Bluetooth to interface vehicle diagnostics with a smartphone application to enable self-driving features like automated lane centering and adaptive cruise control
- Developed the company website, mobile application, machine learning models, conducted consumer feedback surveys, market analysis, and led investor pitches (Amazon investor pitch finalists, Sparkteen accelerator finalists)

### Kidogo
*Project Consultant*

Nairobi, Kenya
*February 2020 - April 2020*

- Created an <u>innovation plan</u> to increase mamapreneur profits 43% and reduce childhood malnutrition with community sensitization workshops, sack farming pilot programs, a revamped curriculum research, and development process and, strategic partnership contracts

### Synbiolic
*Software Developer and Project Lead*

Toronto, Ontario
*December 2019 - April 2020*

- Created a <u>client-facing app</u> for computational drug discovery (<u>Microsoft Imagine Cup North American Finalist</u>)
- Applied probabilistic deep learning and policy approximation to generate molecules and programmed retrosynthesis pathways to synthesize them to produce novel drug-ready molecules

### Sidewalk Labs
*Quayside Project Consultant*

Toronto, Ontario
*November 2019 - February 2020*

- Created an <u>innovation plan</u> to reduce household expenditures through a sharing economy digital infrastructure that monetizes personal assets (selected from 50 teams to present at Sidewalk Labs headquarters to C-suite)

### LidLess
*Project Lead*

Vancouver, British Columbia
*June 2019 - August 2019*

- Worked alongside Materials Engineering department head at University of British Columbia to develop a working prototype for an environmentally friendly, redesigned silicone-based coffee lid including an RFID chip (integrated with mobile banking platforms) and expedited strategic partnerships with local coffee shops
- Received first place standing (1/7 teams) after presenting to investors at the summer STEM program, SHAD

# Leadership and Volunteer Experience —

### The York Region Presidents' Council
*Prime Minister*

York Region, Ontario
*September 2018 - Present*

- Coordinated 11 executives to execute monthly general assemblies for students from 33 secondary schools (increased event attendance from 20 to 1,300 attendees across 3 years), and represent 130,000 students of the York Region District School Board at board meetings
- Appointed to the student trustee vetting committee. Also helped introduce the first Indigenous Student Trustee
- Secured $30,000 in funding and created sponsorship materials to collect $3,000 of in-kind donations to launch BLAST (Breaking Labels and Stigmas Together), the school board's largest annual mental health conference

### The Richmond Hill Mayor's Youth Action Committee
*Director of Logistics*

Richmond Hill, Ontario
*September 2016 - Present*

- Coordinated an internal team of 35 members for the conceptualization and execution of 5 annual, city-wide events to promote community involvement for the youth of Richmond Hill, attracting nearly 300 event attendees
- Created event created event itineraries, and sponsorship materials, collecting total of $1,500 in donations

### TEDxYouth Toronto
*Youth Organizer*

Toronto, Ontario
*June 2018 - November 2019*

- Sourced event speakers (Olympic gold medalists, world-class performers, Dragons Den Investors, and Masterchef Champions), and retained partnerships with Western Ivey, RBC, Shopify, and UofT, procuring $15,000+ sponsorships
- Coordinated strategic marketing strategies; personally responsible for 20% of event applications

### First Nations High-Five Initiative
*Founder and Chairman*

Thunder Bay, Ontario
*September 2016 - September 2017*

- Coordinated internal volunteer team of 50 students to launch community-wide fundraisers, collecting $4,500 in school supplies donations for the Nibinamik (Summer Beaver) First Nations Reserve in Thunder Bay, Ontario

### Karnataka Centre for Developmental Dissabilities
*Teaching Assistant and Curriculum Developer*

Bangalore, India
*July 2017*

- Developed computational literacy and English curriculums and assisted with teaching in a classroom setting of 20 students while volunteering 1-on-1 mentorship sessions during after-school hours
- Created 100-slide interactive life skills PowerPoint series and mental health resource package for students