

# CHEN-YANG SU      STUDENT

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## EDUCATION

<b>Bachelor of Science: Joint Major in Biology and Computer Science</b> McGill University, Montreal, QC	<b>2016 - 2020</b>
<b>International Baccalaureate Diploma</b> Sir Winston Churchill Secondary School, Vancouver, BC	<b>2016</b>

## AWARDS

<b>Scholarship</b> <ul style="list-style-type: none"><li>Awarded \$7125 CAD for 16-weeks of full-time research with Professor Joelle Pineau (McGill, Comp. Sci.) at the Montreal Institute for Learning Algorithms for research in Inverse Reinforcement Learning and Imitation Learning. Supervised by Dr. Wonseok Jeon.</li></ul>	<b>May 2020 – Aug 2020</b>
<b>McGill Faculty of Science Undergraduate Research Award (SURA) (Declined)</b> <ul style="list-style-type: none"><li>Awarded a \$7000 CAD scholarship for 16 weeks of full-time research and development activity under the supervision of a McGill Faculty of Science professor. Awarded by the Department of Biology. Declined.</li></ul>	<b>Mar 2020</b>
<b>Invitation to Golden Key International Honour Society</b> <ul style="list-style-type: none"><li>Top 15% in Program</li></ul>	<b>Jan 2017</b>
<b>Dean's Honour List</b> <ul style="list-style-type: none"><li>Top 10% in Faculty of Science</li></ul>	<b>Jan 2016 – Jan 2017</b>
<b>BC Graduation Program Examinations Scholarship</b> <ul style="list-style-type: none"><li>1250 \$CAD</li></ul>	<b>Jan 2015 – Jan 2016</b>
<b>High School Honour Roll and Principal's List</b>	<b>Jan 2011 – Jan 2016</b>
<b>Fermat Math Contest Distinction</b> <ul style="list-style-type: none"><li>Top 25% in Canada</li></ul>	<b>Jan 2015</b>
<b>Vancouver Math Olympiad (VMO) Distinction</b> <ul style="list-style-type: none"><li>Top 6 Overall in Team Competition</li></ul>	<b>Jan 2015</b>
<b>Certificate of Achievement in BC Research in Science Exhibition (RISE) Conference</b>	<b>Jan 2015</b>
<b>Pascal Math Contest Distinction</b>	<b>Jan 2013</b>

- Top 0.3% in Canada (Rank 79<sup>th</sup>/26657)

## RESEARCH EXPERIENCE

### **Research Intern at Mila**

**Feb 2020 - Present**

Dr. Joelle Pineau, Department of Computer Science, McGill University Faculty of Science, Montreal, QC

- Working with Postdoc Researcher Dr. Wonseok Jeon on single agent Inverse Reinforcement Learning (inverse optimal control) and imitation learning applied to medical datasets.

### **Research Intern**

**Jan 2020 – Apr 2020**

Dr. Simon Gravel, Department of Human Genetics, McGill University Faculty of Science, Montreal, QC

- Combined high replicate genetic simulation with performant composite likelihood inference on admixture tract distributions.
- Performed modelling with *tracts* software and coalescent simulations with *msprime* to infer the history of admixed populations
- Supervised by Dr. Ivan Kyrukov and Professor Simon Gravel

### **Volunteer**

**Aug 2019 – Oct 2019**

Dr. Yue Li, Department of Computer Science, McGill University Faculty of Science, Montreal, QC

- Assigned to a project on developing a polygenic risk score model to better understand the role of genetics in complex diseases.
- Participated in lab meetings.

### **Research Intern**

**May 2019 - Jun 2019**

Dr. Ying-Ting Lin, Department of Biotechnology, Kaohsiung Medical University, College of Life Science, Kaohsiung, Taiwan

- Investigated ligand-receptor binding relationships through molecular docking techniques
- Performed computer drug screening and computational analysis on novel drugs
- Performed modeling and simulation analysis on viral proteins with ChemOffice and Discovery Studio
- Reviewed and edited manuscripts for publication

### **Research Assistant**

**May 2018 - Present**

Dr. Arnold Hayer, Department of Biology, McGill University Faculty of Science, Montreal, QC

- Designed, sequenced, and cloned cadherin chimeras by swapping intracellular and extracellular domains of VE- and P-cadherin.
- Designed and implemented image analysis techniques in MATLAB to investigate coordination of collectively migrating cells.
- Used time-lapse microscopy to perform live cell imaging of HUVECs ectopically expressing cadherin isoforms.
- Assisted in the training of new lab members in tissue culture and basic lab protocols.
- Cultured HUVECs expressing cadherin isoforms including CDH1, CDH2, CDH3, and CDH5
- Assisted with lentiviral transduction

- Performed immunofluorescence on cultured cell lines to determine expression levels and localization of proteins.

**Paper and Journal Revision****2016 - 2017**

National Kaohsiung University of Applied Science

- Help various professors at National Kaohsiung University of Applied Science with editing and revision of their papers on topics such as Industrial Engineering and Fuzzy Engineering.

**COMMUNITY INVOLVEMENT****Retirement Home Caregiver****Summer 2019**

- 350+ hours
- Assisted residents ranging from 62 – 81 years of age
- Performed housekeeping activities such as cooking, cleaning floors, washing dishes, and washing clothes
- Supervised residents during exercise, feeding, medical appointments, family visits and medication intake

**Postoperative Caregiver****Summer 2019**

Chang Gung Memorial Hospital, Kaohsiung, Taiwan, R.O.C

- ~ 16 hours
- Assisted postoperative patients over 80 years of age with daily needs including taking medications, moving from beds to chairs, changing clothes and diapers.
- Aided patients with feeding and recorded volumes and weights of food ingested as well as waste excreted and passed data onto the head nurse in charge
- Helped with changing IV fluids and tubing

**Montreal AI Symposium****2018**

- Helped organize event by signing over 500 attendees in, lead teams of researchers to correct locations, guided participants around the venue and aided in set-up and clean-up in a hectic busy environment.

**Hualien Leadership Camp in Taiwan****Summer 2017**

- Helped students at local and international universities become globally aware and knowledgeable about their country.

**Food Bank Volunteer****Oct 2013 - 2016**

- Helped set up, clean up, and maintain various Food Banks across Vancouver to serve food to people in need.

**Tzu Chi Foundation Member****Sep 2014 - 2016**

- Volunteered and supported the community through charity fundraisers, environmental care and team-building projects.

**Leukemia and Lymphoma Society of Canada****Sep 2015 - 2016**

- Cooperated with other volunteers in fundraising and charity events.

**Community Centre Birthday Party Organizer****Dec 2014 – Jun 2015**

- Helped supervise birthday parties for children under 12
- Assisted with running party games, serving food, monitoring children, interacting with parents, and set up and cleanup.

**BMO Half Marathon Volunteer****Feb 2015**

- Cooperated with others to help maintain a water and food station to serve runners.

**Girls Basketball City Championships Team Ambassador****Feb 2014 – Mar 2014**

- Acted as a delegate for a competing basketball team and guided them around the venue and assisted with general inquiries throughout their competitions.

**VEX Robotics Competition****Jan 2014 – Jun 2014**

- Set up and took down fields for VEX Robotics Competitions, refereed for games, and assisted competitors around the venue.

**TECHNICAL REPORTS**

1. **Su, C.-Y.**, Kryukov, I., and Gravel, S., Inferring the History of Admixed Populations, COMP 401: Project in Biology and Computer Science, McGill University, Montreal, QC, Canada, April 2020
2. **Su, C.-Y.** and Hayer, A., Regulation of Collective Endothelial Cell Migration by N-cadherin, BIOL 467: Independent Research Project 2, McGill University, Montreal, QC, Canada, April 2019
3. **Su, C.-Y.** and Hayer, A., Investigating the Role of Classical Cadherin Isoforms in the Control of Collective Cell Migration, BIOL 466: Independent Research Project 1, McGill University, Montreal, QC, Canada, December 2018
4. **Su, C.-Y.**, Spatial Learning in *Porcellio Scaber*, the Common Sow Bug, International Baccalaureate: Extended Essay, July 2016. *Received 33 out of 36 possible points where 29 points is an A.*

**PRESENTATIONS**

**Su, C.-Y.** (2019) "*Investigating the Role of Classical Cadherin Isoforms in the Control of Collective Cell Migration*", Kaohsiung Medical University, Kaohsiung, Taiwan **June 2019**

- Given to 4<sup>th</sup> Year Undergraduates in the Biotechnology program

**COMMITTEES****SKILLS21 Program Committee, SSMU Student Representative****2019 - Present**

- Discussed with faculty leaders how to get undergrads more involved in self-development workshops. Proposed and categorized 9 new additional workshops for the program.

**Teaching and Learning Services Working Group Committee, SSMU Student Representative 2019 - Present**

- Worked with directors and faculty representatives to determine how to allocate \$4.6M to campus buildings. Learned in-depth of the renovation process from pre-design to actual rebuilding.
- Review classroom projects and provided a voice for students
- Made recommendations for improvements to the campus

### EXTRACURRICULAR ACTIVITIES/INTERESTS

<b>Math Club, Environment Club, Ballroom Dance Club, Table Tennis Team</b>	<b>2014-2016</b>
<b>Gymnastics</b>	<b>2014 - 2015</b>
<ul style="list-style-type: none"><li>• Taught gymnastics skills and drills to children 12 and under</li></ul>	
<b>Cross Country and Track &amp; Field</b>	<b>2011 - 2016</b>
<ul style="list-style-type: none"><li>• Captain of Cross Country Team; raced at BC Provincial Championships</li></ul>	
<b>Red Cross Swimming</b>	<b>2013</b>

### OTHER SKILLS

**Proficient in Python, C, Java, MATLAB, R, OCaml, Git, and Unix/Linux shell scripting**  
**Familiar with Machine Learning Frameworks such as Scikit-Learn, PyTorch**

### CERTIFICATIONS

<b>Safe Use of Biological Safety Cabinets</b>	<b>May 2018 – May 2021</b>
<b>Introduction to Biosafety</b>	<b>May 2018 – May 2021</b>
<b>Hazardous Waste Management &amp; Disposal</b>	<b>Jun 2018 – Jun 2021</b>
<b>WHMIS</b>	<b>Aug 2018 – Aug 2021</b>

### LANGUAGES

Fluent: English, Chinese Mandarin, Taiwanese  
Basic: French