CHEN-YANG SU STUDENT

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EDUCATION

Bachelor of Science: Joint Major in Biology and Computer Science **2016 - 2020**
McGill University, Montreal, QC

International Baccalaureate Diploma **2016**
Sir Winston Churchill Secondary School, Vancouver, BC

AWARDS

Scholarship **May 2020 – Aug 2020**

- 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.

McGill Faculty of Science Undergraduate Research Award (SURA) (Declined) **Mar 2020**

- 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.

Invitation to Golden Key International Honour Society **Jan 2017**

- Top 15% in Program

Dean's Honour List **Jan 2016 – Jan 2017**

- Top 10% in Faculty of Science

BC Graduation Program Examinations Scholarship **Jan 2015 – Jan 2016**

- 1250 $CAD

High School Honour Roll and Principal's List **Jan 2011 – Jan 2016**

Fermat Math Contest Distinction **Jan 2015**

- Top 25% in Canada

Vancouver Math Olympiad (VMO) Distinction **Jan 2015**

- Top 6 Overall in Team Competition

Certificate of Achievement in BC Research in Science Exhibition (RISE) Conference **Jan 2015**

Pascal Math Contest Distinction **Jan 2013**

- Top 0.3% in Canada (Rank 79th/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 – April 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 4th 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

Math Club, Environment Club, Ballroom Dance Club, Table Tennis Team **2014-2016**

Gymnastics **2014 - 2015**

- Taught gymnastics skills and drills to children 12 and under

Cross Country and Track & Field **2011 - 2016**

- Captain of Cross Country Team; raced at BC Provincial Championships

Red Cross Swimming **2013**

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

Safe Use of Biological Safety Cabinets	**May 2018 – May 2021**
Introduction to Biosafety	**May 2018 – May 2021**
Hazardous Waste Management & Disposal	**Jun 2018 – Jun 2021**
WHMIS	**Aug 2018 – Aug 2021**

LANGUAGES

Fluent: English, Chinese Mandarin, Taiwanese
Basic: French