Dani Chu

1012 Gilroy Crescent, Coquitlam, BC, Canada, V3J 3T1 | 778-873-8582 | dani_chu@sfu.ca | danichusfu.github.io

EDUCATION

SIMON FRASER UNIVERSITY, BURNABY, BC 09/2018 – 04/2020 (Expected)
Masters of Science in Statistics
Supervisor: Dr. Tim Swartz
Honours & Awards:

NSCERC Alexander Graham Bell Canada Graduate Scholarship ($17,500 CDN)	09/2018 – 08/2019

SIMON FRASER UNIVERSITY, BURNABY, BC 09/2013 – 04/2018
Bachelor of Science (with Distinction) CGPA: 3.69/4.33
Joint Major in Mathematics and Computing Science, Major in Statistics
Semester Abroad – San Diego State University CGPA: 3.93/4.00
Honours & Awards:

Department of Statistics and Actuarial Science Endowment Award ($1,200 CDN)	Spring 2018
Department of Mathematics Award ($1,000 CDN)	Spring 2018
President's Honour Roll	Fall 2016, Spring 2018
Dean's Honour Roll	Spring: 2015, 2017, 2018, Fall: 2016, 2017
Statistics Undergraduate Chair Travel Grant ($1,000 CDN)	Fall 2017
NSERC Undergraduate Student Research Award ($6,356 CDN)	Summer 2017
International Mobility Award ($1,000 CDN)	Spring 2016
SDSU Dean's List	Spring 2016
SDSU On Campus Housing Scholarship ($5,000 USD)	Spring 2016

REFEREED PUBLICATIONS

Tingling, P., Masri, K. and **Chu, D**. (Under Review). Catch and Release? Endowment Effects in the NHL Expansion Draft. *Sport, Business, Management: an International Journal*

Chu, D., Wu, Y. and Swartz, T.B. (2018, March). Modified Kelly Criteria. *The Journal of Quantitative Analysis in Sports,* 14(1), pp. 1-11.

CONTRIBUTED PRESENTATIONS

Chu, D., Sheehan, R., Tsai, M.-C., and Davis, M.J. *Pacing Profiles in World Championship 2000m Rowing Explored Through k-Shape Clustering* (2018, October). Poster accepted for presentation at the Carnegie Mellon Sports Analytics Conference. Pittsburgh, Pennsylvania.

Chu, D., Wu, Y., Reyers, M., and Doyle, C. *Personalize Foul Trouble, Improving Foul Management in the NBA* (2018, August). Poster presented at the Cascadia Symposium on Statistics in Sports. Vancouver, British Columbia.

Chu, D., Sheehan, R., Tsai, M.-C., and Davis, M.J. *Pacing Profiles in World Championship 2000m Rowing Explored Through k-Means Clustering* (2018, August). Poster presented at the Cascadia Symposium on Statistics in Sports. Vancouver, British Columbia.

Chu, D., Wu, Y. and Swartz, T.B. *Modified Kelly Criteria* (2018, July). Speed presentation and posted presented at the Statistics in Sport Undergraduate Research Competition at the Joint Statistical Meetings. Vancouver, British Columbia.

Tingling, P., Masri, K. and **Chu, D**. (2018, May). *Catch and Release? Endowment Effects in the NHL Expansion Draft*. Presentation selected for the Administrative Sciences Association of Canada, Sport & Tourism Management Division. Toronto, Ontario.

Chu, D., Reyers, M., Wu, Y., Bailey, S. and Bystrom, K. (2018, March). *Structure vs Speed: Evaluating the Power Play Neutral Zone Regroup Decision in the AHL.* Presented at the Vancouver Hockey Analytics Conference. Vancouver, British Columbia.

Wu, Y., **Chu, D.**, He, S. and Paton, F. (2017, July). *Applications of Modern Computational Methods and Statistical Learning Theory for Data Driven Decisions*. Presented at Fraser Health Population and Public Health Lunch & Learn. Surrey, British Columbia.

TECHNICAL SKILLS

Proficient: R, Python, SQL, LaTex, C, C++, MATLAB, R Shiny, Git
Familiar: Spark, SAS, Tableau, Sage, MS Office, Maple, HTML, XML, Adobe Analytics, Google Ads Google Search Ads 360, Qlikview

TECHNICAL EXPERIENCE

BEST BUY CANADIAN CORPORATE HEADQUARTERS 05/2018 – 09/2018
Digital Analyst Intern – Ecommerce Department
Job Description: Worked in an agile development environment on a performance marketing engine for expanded assortment products. Modelled product conversion rates under a Bayesian Framework, developed price optimization tools and developed a more efficient cost attribution system. Managed and updated the Google Ads campaigns for the marketing engine.

CANADA SOCCER WOMEN'S NATIONAL TEAM 03/2018 – PRESENT
SEATTLE UNIVERSITY
GEORGIA SOUTHERN UNIVERSITY
Research Assistant
Project Description: Built Critical Power Models using millions of rows of Catapult Biometric data over the course of training sessions and games with Eli Mizelman and Dr. Dave Clarke. The models will be used to better evaluate substitution patterns and training loads to prevent injury and promote more efficient performances. Used spark interfacing with KEY | SFU Big Data compute cluster resources to manage the amount of data available.

CANADIAN SPORT INSTITUTE PACIFIC 06/2017 – PRESENT
Research Assistant – Rowing Canada
Project Description: Investigated GPS race data to determine optimal pacing strategies across various rowing events. Project was a part of a directed studies course supervised by Dr. Jack Davis of SFU and Dr. Ming-Chang Tsai of CSIP.
Research Assistant – Canada Women's Rugby Sevens
Project Description: Analyzed both tagged data and Catapult Biometric data to explain score differential supervised by Eli Mizelman, a Sports Analytics PHD student, Dr. Dave Clarke, and Dr. Tim Swartz.

SIMON FRASER UNIVERSITY MEN'S BASKETBALL 09/2018 – PRESENT
Research Assistant
Project Description: Working with the coaching staff to set realistic and useful goals for each game. Developing a system to scout and identify talent in NWAC, CEGEP, CCCAA, and ACCAC Junior College Conferences.

CANADA BASKETBALL 06/2017– PRESENT
Lead Researcher
Project Description: Led a confidential research project for Canada Basketball, involving Bayesian Methods and Linear Models to predict player success in international play.
Lead Developer
Project Description: Wrote R code to scrape, clean and format data from specific FIBA tournament games. This tool was used by Team Canada at the FIBA U19 World Championships where they won gold.

UNIVERSITY OF BRITISH COLUMBIA MEN'S BASKETBALL 04/2018 – PRESENT
Project Leader
Project Description: Preliminary stages of working with the coaching staff to answer their questions about team performance and strategy.

TERRY FOX SECONDARY JUNOIR BOYS BASKETBALL ANALYTICS 09/2017 – 03/2018
Project Leader
Project Description: Developing an innovative platform for collecting and analyzing data in high school basketball. Working intimately with the coaching staff to educate them about the value of analytics in their decision making.

STRIDES STUDY 02/2018 – PRESENT
Statistical Consultant
Project Description: Advised MSc student Stephanie Maganja and her supervisor Dr. Dawn Mackey on the statistical tests of their validity study of commercial-grade activity monitors. Helped write code to clean and model their data.

NATURAL SCIENCE AND ENGINEERING RESEARCH COUNCIL OF CANADA SUMMER 2017

Undergraduate Student Research Award Recipient
Job Description: Research focused on sports analytics and mathematical systems for gambling under Professor Dr. Tim Swartz at SFU's Department of Statistics. Derived a more conservative Kelly Criterion using a Bayesian approach, created an R Shiny app and co-authored a research paper that is currently under review for publishing.

FRASER HEALTH – POPULATION AND PUBLIC HEALTH OBSERVATORY   05/2017 – 12/2017
Statistical Research Intern – Overdose Analytics
Job Description: Performed ad-hoc analysis on areas of the overdose crisis in Fraser Health. Collaborated on a larger analysis using machine learning techniques to identify at risk groups and optimal intervention points. Investigated the higher rate of ambulance rejection after an overdose with a focus on the location of the patient.

PROFESSIONAL & UNIVERSITY SERVICE

SFU SPORTS ANALYTICS CLUB   08/2015 – PRESENT
President, Accountant
Volunteer Responsibilities: Organized projects and events for club members. Projects include work with Canada Basketball, Canadian Sport Institute Pacific, UBC Basketball Vancouver Canucks and Vancouver Whitecaps.

VANCOUVER SPORTS ANALYTICS SYMPOSIUM & HACKATHON   01/2017 – PRESENT
VanSASH 2018 Lead Event Organizer
Volunteer Responsibilities: Planned the expansion of the event in September of 2018 to include 120 participates. This iteration included 2 divisions, soccer and business, each divided into 2 streams, data beginners and data experienced.
VanSASH 2017 Lead Event Organizer
Volunteer Responsibilities: Organized sponsors, speakers, venue, catering, grant requests and volunteers for the 100-person event in 2017. The event was sponsored by the Vancouver Whitecaps Football Club, Vancouver Canucks, Canadian Statistical Science Institute, Key Big Data Hub, Simon Fraser Student Society and many more. Additionally, was the host and a mentor at the event. See www.vansash.com for more details.

VANCOUVER WHITECAPS FC – SOCCER OPERATIONS   03/2017 – PRESENT
Game Day Analytics Intern & Volunteer Coordinator
Volunteer Responsibilities: Filmed games and provided game day support for the analytics and scouting team. Organized, scheduled and trained new volunteers for the department.

CASCADIA SYMPOSIUM ON STATISTICS IN SPORTS   08/2018
Volunteer Coordinator
Volunteer Responsibilities: Organized and scheduled volunteers, ran the registration booth and helped run the prize raffle.

JOURNAL OF BIG DATA   SUMMER 2018
Peer Reviewer
Volunteer Responsibilities: Reviewed a paper for the Journal of Big Data.

ADMINISTRATIVE SCIENCES ASSOCIATION OF CANADA   SPRING 2018
Peer Reviewer
Volunteer Responsibilities: Reviewed a paper for the Administrative Sciences Association of Canada Conference.

STATISTICS & ACTUARIAL SCIENCES STUDENT SOCIETY   FALL 2017
Vice President
Volunteer Responsibilities: Provided insight and direction on the renovations of the Mathematics and Statistics & Actuarial Sciences Student Common Rooms.

SFU EXCHANGE   SPRING 2016 – PRESENT
Exchange Ambassador
Volunteer Responsibilities: Attended pre-departure meetings, recruitment events and diversity events at Simon Fraser University and San Diego State University.

TEACHING EXPERIENCE

INTRODUCTION TO STATISTICS FOR THE SOCIAL SCIENCES   SUMMER 2018, FALL 2018
Tutor Marker

PRIVATE MATH & STATISTICS TUTOR   03/2012 – PRESENT
Grade 10 - 2nd Year University Level Math Courses

COMPETITIONS

1ST PLACE ($300 CDN) – SFU SURJ RESEARCH POSTER COMPETITION   09/2018
Project Description: Presented research on pacing profiles in 2000m rowing.

1ST PLACE (PRIZE PACK) – SACRAMENTO KINGS CASE COMPETITION   03/2018 – 04/2018
Project Description: Used survival analysis, approximations to exponential distributions and bootstrapping methods to give predictions of the time an NBA player had before fouling out of a game given he had a given number of fouls. Built a Shiny App for coaches to use on the sidelines as well as 6 page report to communicate our results.

TOP 75 QUALIFIER – NSERC'S *SCIENCE, ACTION!* VIDEO CONTEST   01/2018
Project Description: Produced, wrote and promoted a 1-minute summary video of PhD candidate Trevor Thompson's research into spot fire simulators and their applications to forest fires.

1ST PLACE ($350 CDN) – SFU BUSINESS ANALYTICS HACKATHON, VANCOUVER   11/2017
Project Description: Modeled customer retention for Grocery Consolidated with an ensemble model and made business recommendations based on our results.

1ST PLACE ($125 CDN) – HOCKEY ANALYTICS DATA SPRINT, VANCOUVER   11/2017
Project Description: Analyzed the ability of AHL team to breakout of their zone on the power play.

COMPETITOR – NBA HACKATHON, NEW YORK CITY   09/2016, 09/2017
2017 Project Description: Points Gained Shooting – Created a new metric to measure shooting skill for basketball players across games, seasons and careers by calculating a player's shooting performance relative to a league average player.
2016 Project Description: Corner 3s, the Following Possession – Computed the rate of fast breaks created by shots from a given location using Sport VU data to determine offensive rebounding and transition defense strategies.

4TH PLACE ($150 CDN) – MOJIO CASE COMPETITION, VANCOUVER   SPRING 2017
Project Description: Classified engine use based on how a car was driven using k-means clustering.

BASKETBALL COACHING EXPERIENCE

HEAD COACH
TC North Basketball Academy Junior Varsity Fall Travelling Team	10/2016 – PRESENT
Dr. Charles Best Secondary School Junior/Senior Boys Basketball	04/2013 – PRESENT
Grade 4 & 5 Private Skill Sessions	SUMMER 2017

ASSISTANT COACH
TC North Basketball Academy 3 on 3 Spring Camps	SPRING 2017. SPRING 2018
Tri-City Youth Basketball Association Seasonal Camps	SUMMER 2016, WINTER 2016
Canada Basketball – Centre for Performance Camp	FALL 2015, FALL 2016
Special Olympics BC - Coquitlam Basketball	WINTER 2015
Basketball BC U15 Fraser Valley North Regional Team	SPRING 2015

Description: I have coached basketball for an average of 6 days a week while in season since 2013. I have travelled to the United States to coach in the North Cascades AAU Basketball League and other AAU tournaments. I have developed practice plans, game schedules and offseason training regiments for players of all ages. As the head coach, I have dealt with administrative duties and parental communications. Most importantly I strive to pass down my love for the game to my players and encourage them to develop a strong work ethic and mental toughness. I have experience pushing elite players to improve their skills, cultivating a love for the game with beginners, and teaching the game to those with unique physical and mental challenges.

MEDIA RECOGNITION

SFU Sports Analytics Club runs VanSash, a hackathon for students and by students (2018, September). www.The-Peak.ca

How the SFU Sports Analytics Club has become a big player within the sports analytics industry (2017, November). www.The-Peak.ca

Vancouver Sports Analytics Symposium and Hackathon (2016, June). www.The-Peak.ca

REPORTS & BLOGS

Chu, D. and Reyers, M. *The Peak Stat of the Week: Strokes Gained* (2018, March). www.The-Peak.ca

Reyers, M. and **Chu, D.** *The Peak Stat of the Week: SPARQ Scores* (2018, February). www.The-Peak.ca

Chu, D. and Reyers, M. *The Peak Stat of the Week: Corsi* (2018, January). www.The-Peak.ca

Lee, V., Bharmal A., Kinniburgh, B., … **Chu, D.** … *2017 Chief Medical Health Officer's Report on The Hidden Epidemic: The Opioid Overdoes Emergency in Fraser Health* (2018, January). Fraser Health Authority, Health Reports.