

CONTACT INFORMATION	Larkin Liu Packstation 261 - 954340207 10439 Berlin, DE	+49 152 24517586 larkin.liu@tum.de <a href="https://larkz.github.io">https://larkz.github.io</a>
LANGUAGES	English (Native), Chinese (Native), German (Goethe Zertifikat B1)	
CITIZENSHIP	Canadian	
RESEARCH INTERESTS	Stochastic Decision Processes, Reinforcement Learning, Software Design, Business Analytics, Causal Inference, Deep Learning	
TECHNICAL SKILLS	Programming Languages (Advanced Proficiency): Programming Languages (Intermediate Proficiency): Distributed Computing Frameworks: Operating Systems:	Python, Scala, Kotlin, C, R C++, Objective C, Java, Shell, Assembly Apache Spark, Hadoop Windows, Linux, MacOS
EDUCATION	<b>University of Toronto</b> Toronto, Ontario, Canada Master's of Applied Science, Industrial Engineering 2015 - 2017 Focus in Operations Research <ul style="list-style-type: none"> <li>• Thesis: <a href="#">Comparative Study between Statistical Fraud Detection Methods on eCommerce</a></li> <li>• Advisor: Prof. Dr. Viliam Makis</li> <li>• Committee: Viliam Makis, Chi-Guhn Lee, Vahid Sarhangian</li> </ul> <b>University of Toronto</b> Toronto, Ontario, Canada Bachelors of Applied Science, with Honours, Mechanical Engineering 2010 - 2015 Minor in Robotics and Mechatronics Extra Credits in Physics & Computer Science	
JOURNAL PUBLICATIONS	[1] L. Liu, J. Luo. <i>mctreeseach4j</i> : A Monte Carlo Tree Search Implementation for the JVM. <i>Journal of Open Source Software</i> [In Review]. 2021	
CONFERENCE PROCEEDINGS	[2] L. Liu, R. Downe, and J. Reid. Multi-Armed Bandit Strategies for Non-Stationary Reward Distributions and Delayed Feedback Processes. <i>In Canadian Operational Research Society 61st Annual Conference (CORS)</i> . <a href="#">arXiv:1902.08593v1</a> . 2019	
MANUSCRIPTS	[3] L. Liu, J.T. Luo, An Extensible and Modular Design and Implementation of Monte Carlo Tree Search for the JVM. <i>Manuscript available</i> . <a href="#">doi: 10.20944/preprints202107.0622.v1</a> . 2021  [4] L. Liu. Algorithm for Two-Phase Facility Planning via Balanced Clustering and Integer Programming. <i>Manuscript available</i> . <a href="#">arXiv:1902.08593v1</a> . 2020  [5] L. Liu, J. Reid, Y.C. Lin. Improving the Performance of the LSTM and HMM Model via Hybridization. <i>Manuscript available</i> . <a href="#">arXiv:1907.04670</a> . 2019	

## INVITED TALKS

- [6] Deploying Deep Learning Models at Scale on GPU-enabled Clusters. *Invited at Speaker Databricks-Zalando Community Event*. Online Event. 2021
- [7] Recurrent Neural Networks for Quasi AB Testing. *Invited Speaker at Data Science Days Zalando*. Online Event. 2021.
- [8] Multi-Armed Bandit Strategies for Non-Stationary Reward Distributions and Delayed Feedback Processes. *Invited Speaker at AISC*. Toronto ON Canada. 2019.
- [9] Application of Machine Learning in Advertising Technology at StackAdapt. *Guest Lecturer at the University of Toronto School of Continuing Studies*. Toronto ON Canada. 2018.
- [10] How Data Science is Revolutionizing Digital Advertising *Invited interview at StackAdapt*. Toronto ON Canada. 2017.
- [11] What is Artificial Intelligence? *Invited Guest on Interview with Najeeb Khan*. Toronto ON Canada. 2017.

## TECHNICAL REPORTS

- [12] Early Gearbox Fault Detection via Auto-Regressive Models in the Time Domain constructed from Vibrational Data. *Summer Research Fellowship Program*. University of Toronto. 2012
- [13] Automated Measurement of Contact Angles for Sessile Droplets using MATLAB Image analysis Library. *Summer Research Assistant*. University of Toronto 2011

## ARTICLES

- [14] L. Liu. Data Science Do's and Don'ts. *Online Article*. [Available on LinkedIn](#). 2016

## TEACHING EXPERIENCE

- Mentor, *SharpestMinds*** **January 2019 - September 2020**  
Toronto, ON, Canada
  - Prepared tutorials and lessons in mathematics, statistics, computer science and machine learning for mentees who wish to work in the industry based out of Canada and the USA.
  - **Past Mentees:**
    - P. Damiba, Data Scientist US Citizenship and Immigration Services (2020)
    - G. Swarg, Data Engineer Canada Foodbank (2020)
    - S. Badavanahalli, Software Developer CNET (2019)
- Teaching Assistant - MIE364, *University of Toronto*** **Winter 2017**  
Toronto, ON, Canada
  - Curriculum grading for *Reliability Engineering*
- Teaching Assistant - APS104, *University of Toronto*** **Fall 2016**  
Toronto, ON, Canada
  - Laboratory and tutorial instructor for *Introduction to Computer Programming*

## GRANTS & AWARDS

- Mitacs Accelerate Industry Government Joint Research Grant (2015) C\$30,000
- Wallace G Chalmers Engineering Design Award (2013) C\$860
- Faculty of Applied Science Engineering Research Fellowship (2012) C\$3000
- Cancer Care Ontario IDEA Challenge Development Grant (2012) C\$1000
- Magna Family Scholarship (2010) C\$10,000

RECOGNITION	<ul style="list-style-type: none"> <li>• Class Rank of 2/202 Students in Final Semester University of Toronto (2015)</li> <li>• Sir Isaac Newton Physics Contest top 1% of all Contestants (2009)</li> </ul>	
INDUSTRY EXPERIENCE	<p><b>Zalando SE</b>, <i>Berlin, Germany</i> Applied Scientist</p> <p><b>Loblaw Companies Ltd.</b>, <i>Toronto, ON, Canada</i> Data Scientist</p> <p><b>StackAdapt</b>, <i>Toronto, ON, Canada</i> Data Scientist</p> <p><b>Paytm Labs</b>, <i>Toronto, ON, Canada</i> Visiting Scientist</p> <p><b>RBC Capital Markets</b>, <i>Toronto, ON, Canada</i> Research Student</p> <p><b>Advanced Micro Devices Inc.</b>, <i>Toronto, ON, Canada</i> Reliability Engineering Intern</p>	<p><b>January, 2020 - Present</b></p> <p><b>August, 2018 - January 2020</b></p> <p><b>October, 2016 - August, 2018</b></p> <p><b>October, 2015 - June, 2016</b></p> <p><b>June, 2014 - April, 2015</b></p> <p><b>May, 2013 - May, 2014</b></p>
PUBLIC SERVICE	<ul style="list-style-type: none"> <li>• <i>Session Chair for Business Analytics Section</i>, CORS Annual Conference</li> </ul>	2019
MEMBERSHIP	<ul style="list-style-type: none"> <li>• <i>Member</i>, German-Chinese Association of Artificial Intelligence (GCAAI)</li> <li>• <i>Member</i>, Artificial Intelligence Socratic Circles (AISC)</li> <li>• <i>Member</i>, Canadian Operational Research Society (CORS)</li> <li>• <i>President</i>, University of Toronto Data Science Group (UTDSG)</li> <li>• <i>Member</i>, University of Toronto Operational Research Group (UTORG)</li> <li>• <i>Member</i>, University of Toronto Robotics Association (UTRA)</li> </ul>	<p>2020-</p> <p>2018-</p> <p>2015-</p> <p>2015-2017</p> <p>2015-2017</p> <p>2012-2017</p>