Larkin Liu

CONTACT INFORMATION	Larkin Liu Berlin, DE	larkin.liu@alum.utoronto.ca https://larkz.github.io

LANGUAGES   English, Chinese, German

RESEARCH INTERESTS   Stochastic Processes, Reinforcement Learning, Software Implementation, Bandit Algorithms, Data Analysis, Causal Inference, Deep Learning

TECHNICAL SKILLS

Programming Languages (Advanced Proficiency):	Python, Scala, Kotlin, C, R
Programming Languages (Intermediate Proficiency):	C++, Objective C, Java, Shell, Assembly
Distributed Computing Frameworks:	Apache Spark, Hadoop
Operating Systems:	Windows, Linux, MacOS

EDUCATION

University of Toronto, Toronto, Ontario, Canada

Master's of Applied Science, Industrial Engineering
Focus in Operations Research, 2017

- Thesis: Comparative Study between Statistical Fraud Detection Methods on eCommerce
- Advisor: Viliam Makis

University of Toronto, Toronto, Ontario, Canada

Bachelors of Applied Science, with Honours, Mechanical Engineering
Minor in Robotics and Mechatronics, 2015

OPEN SOURCE   L. Liu, J. Luo. *mctreesearch4j* - A modular JVM compatible Monte Carlo Tree Search Implementation for Markov Decision Processes. [Github Repo]. 2021

MANUSCRIPTS   L. Liu. Algorithm for Two-Phase Facility Planning via Balanced Clustering and Integer Programming. *In journal review, manuscript available.* arXiv:1902.08593v1. 2021

L. Liu, J. Reid, Y.C. Lin. Improving the Performance of the LSTM and HMM Model via Hybridization. *Manuscript available.* arXiv:1907.04670. 2019

CONFERENCE PAPERS   L. Liu, R. Downe, and J. Reid. Multi-Armed Bandit Strategies for Non-Stationary Reward Distributions and Delayed Feedback Processes. *In Canadian Operational Research Society 61st Annual Conference (CORS).* arXiv:1902.08593v1. 2019

INVITED TALKS   Multi-Armed Bandit Strategies for Non-Stationary Reward Distributions and Delayed Feedback Processes. *Invited Speaker at AISC.* 2019.

Application of Machine Learning in Advertising Technology at StackAdapt. *Guest Lecturer at the University of Toronto School of Continuing Studies* , 2018.

TECHNICAL REPORTS   Early Gearbox Fault Detection via Auto-Regressive Models in the Time Domain constructed from Vibrational Data. Summer Research Fellowship Program. University of Toronto. 2012

Automated Measurement of Contact Angles for Sessile Droplets using MATLAB Image analysis Library. Summer Research Assistant. University of Toronto 2011

Honours and 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

Teaching Experience

Mentor, *SharpestMinds*   **January 2019 - Present**
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
- Provided course grading for *Reliability Engineering*

Teaching Assistant - APS104, *University of Toronto*   **Fall 2016**
Toronto, ON, Canada
- Provided laboratory and tutorial instruction for *Introduction to Computer Programming*

Industry Experience

Applied Scientist, *Zalando SE*   **January, 2020 - Present**
Berlin, Germany

Data Scientist, *Loblaw Companies Limited*   **August, 2018 - January 2020**
Toronto, ON, Canada

Data Scientist, *StackAdapt*   **October, 2016 - August, 2018**
Toronto, ON, Canada

Visiting Scientist, *Paytm Labs*   **October, 2015 - June, 2016**
Toronto, ON, Canada

Research Student, *RBC Capital Markets*   **June, 2014 - April, 2015**
Toronto, ON, Canada

Reliability Engineer *, *Advanced Micro Devices*   **May, 2013 - May, 2014**
Toronto, ON, Canada

Public Service	• *Session Chair for Business Analytics Section*, CORS Annual Conference	2019

Membership	• *Member*, German-Chinese Association of Artificial Intelligence (GCAAI)	2020-
	• *Member*, Artificial Intelligence Socratic Circles (AISC)	2018-
	• *Member*, Canadian Operational Research Society (CORS)	2015-
	• *President*, University of Toronto Data Science Group (UTDSG)	2015-2017
	• *Member*, University of Toronto Operational Research Group (UTORG)	2015-2017
	• *Member*, University of Toronto Robotics Association (UTRA)	2012-2017

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*Professional Experience Year Internship Program