Jia Lin Hau

Department of Computer Science (Ph.D. Candidate)
University of New Hampshire, Durham, NH

jialin.hau@gmail.com   https://monkiedein.github.io/CV/   github.com/monkiedein   gitlab.com/monkiedein

Research Interests	Reinforcement learning, machine learning, Bayesian method, risk-averse optimization, financial mathematics, and actuarial science.		
Education	University of New Hampshire	Advisor: Marek Petrik	2019 - present
	M.S. / Ph.D in Computer Science *Depth Talk: Risk-Averse Soft-Robust MDPs with EVaR and Entropic Risk*		GPA: 4.00/4.00
	University of New Hampshire	Advisor: Linyuan Li	2015 - 2018
	B.S. in Applied Mathematics: Economics. *Project: MDP on Blackjack*		GPA: 3.89/4.00
Professional Experience	UNH Computer Science Department		
	Research Assistant - Reinforcement Learning and Robustness Lab		2020 - present
	Teaching Assistant		
	CS 520 - Assembly language programming and machine organization		Spring 2020
	CS 410P - Introduction to scientific programming in Python		Spring 2020
	CS 410C - Introduction to scientific programming in C		Fall 2019
	CS 725 - Computer networks		Fall 2019
	CS 410P - Introduction to scientific programming in Python		Spring 2019

Idea Math
Junior Instructor/ Summer Camp Resident Assistant   2018 - 2019
- Enhance elementary schoool students problem-solving skills for Mathematics competition.
- Created study plans for the class and conducted group activities with students.
- Structured activities and events for residential students.

UNH International Student Organization
Vice President   2017 - 2018
- Collaborated with other organizations to spread culture awareness.
- Allocated tasks for volunteers and executive members based on their unique advantages.

UNH Mathematics Center
Mathematics Center Tutor   2017- 2018
- Clarified Mathematics concepts and assisted students with their homework.
- Organized a study plan and helped students to catch up with class content.
- Conducted review sessions to help students prepare for quizzes and exams.

UNH Residential Life
Resident Assistant   2016 - 2017
- Structured social activities, created safe and supportive environment for 500 residents.
- Responsible for proper protocol involving respond to alcohol intoxication and roommate issues.

Publications	***RASR: Risk-Averse Soft-Robust MDPs with EVaR and Entropic Risk.*** Jia Lin Hau, Marek Petrik, Mohammad Ghavamzadeh, Reazul Russel Currently available Risk Averse MDP algorithm suffers from either computational efficiency or large approximation error. We provided algorithms for ERM and EVaR-MDP and proof that they are accurate, consistent and can be compute in efficiently in polynomial time.	ArXiv 2022

Workshops	***Robust pest management using reinforcement learning.*** Talha Siddique, **Jia Lin Hau**, Shadi Atallah, Marek Petrik	RLDM 2019

We provided a robust framework to behave risk aversely for domains with limited data. We utilized STAN Bayesian statistical inference along with MCMC sampling to capture prior knowledge, generate posterior datasets, and compute the optimal Robust MDP policy via policy iteration.

Reviewing International Conference on Machine Learning 2022 (ICML)
NeurIPS 2021 Workshop on Safe and Robust Control of Uncertain Systems

Projects	***Cryptocurrency Forecasting Analytics.*** **Jia Lin Hau**, Gerasimos Mouikis, Spencer Pope	May 2018

Forecasted cryptocurrency with time series analysis method (VAR) on the log return of the closing price.

MDP on Blackjack. **Jia Lin Hau**, Marek Petrik	Jul 2018

Utilized MDP (Value Iteration) to solve for the optimal action (Stand, Hit, Split, Double, or Surrender) for BlackJack with R.

WTI - *UNH 2017 Fall stock pitch competition (Semifinal).* **Jia Lin Hau**	Oct 2017

Selected high profit stock with Advance Technical Indicator.

EMOAI - *UNH 2019 Holloway prize competition (Semi Final).* Shayan Amani, **Jia Lin Hau**, Chao Chi Cheng, Lekyang Sai	Apr 2018

Deep Learning facial recognition to avoid depression.

Other Involvement

Manchester City **Marathon** by SNHU (1st in Co-ed Relay)	2016
Seacoast **Half Marathon** in Portsmouth (4th in division)	2015
Certified *PADI* Advance Open Water **Scuba Diver**	2013
Certified *NAUI* Open Water **Scuba Diver**	2019
Passed **Actuarial Science** Exam P: Probability	2018
Bloomberg Market Concepts (**BMC**) Completion	2018
Member of *Pi Mu Epsilon* of National Honorary **Mathematics** Society	2017 - 2018

Skills **Programming Languages**: Python, R, MATLAB, Julia, C, C++, SQL
Tools: Git, Excel, JMP, BMC, Tableau
Languages: English, Malay, Mandarin, Cantonese.

Citizenship Malaysia
VISA status F-1 student (eligible to work under CPT and 3-years OPT)