

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 Ph.D in Computer Science	Advisor: Marek Petrik	2019 - present GPA: 4.00/4.00
	University of New Hampshire M.S. in Computer Science. <i>Project: Risk-Averse Soft-Robust MDPs with EVaR and Entropic Risk</i>	Advisor: Marek Petrik	2019 - 2022 GPA: 4.00/4.00
	University of New Hampshire B.S. in Applied Mathematics: Economics. <i>Project: MDP on Blackjack</i>	Advisor: Linyuan Li	2015 - 2018 GPA: 3.89/4.00
Professional Experience	UNH Computer Science Department		
	<i>Research Assistant</i> - Reinforcement Learning and Robustness Lab		2020 - present
	<i>Teaching Assistant</i>		
	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		
	<i>Junior Instructor/ Summer Camp Resident Assistant</i>		2018 - 2019
	<ul style="list-style-type: none">Enhance elementary school 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		
	<i>Vice President</i>		2017 - 2018
	<ul style="list-style-type: none">Collaborated with other organizations to spread culture awareness.Allocated tasks for volunteers and executive members based on their unique advantages.		
	UNH Mathematics Center		
	<i>Mathematics Center Tutor</i>		2017- 2018
	<ul style="list-style-type: none">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		
	<i>Resident Assistant</i>		2016 - 2017
	<ul style="list-style-type: none">Structured social activities, created a safe and supportive environment for 500 residents.Responsible for proper protocol involving responding to alcohol intoxication and roommate issues.		
Publications	<i>RASR: Risk-Averse Soft-Robust MDPs with EVaR and Entropic Risk.</i> Jia Lin Hau, Marek Petrik, Mohammad Ghavamzadeh, Reazul Russel		ArXiv 2022

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 computed efficiently in polynomial time. Our algorithm consistently outperforms other risk averse algorithms over a variety of tabular domains in (VaR, CVaR, EVaR) the risk of test returns.

Workshops	<i>Robust pest management using reinforcement learning.</i> Talha Siddique, Jia Lin Hau , Shadi Atallah, Marek Petrik 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.	RLDM 2019
Reviewing	International Conference on Machine Learning 2022 (ICML) NeurIPS 2021 Workshop on Safe and Robust Control of Uncertain Systems	
Projects	<i>Cryptocurrency Forecasting Analytics.</i> Jia Lin Hau , Gerasimos Mouikis, Spencer Pope Forecasted cryptocurrency with time series analysis method (VAR) on the log return of the closing price.	May 2018
	<i>MDP on Blackjack.</i> Jia Lin Hau , Marek Petrik Utilized MDP (Value Iteration) to solve for the optimal action (Stand, Hit, Split, Double, or Surrender) for BlackJack with R.	Jul 2018
	<i>WTI - UNH 2017 Fall stock pitch competition (Semifinal).</i> Jia Lin Hau Selected high profit stock with Advance Technical Indicator.	Oct 2017
	<i>EMOAI - UNH 2019 Holloway prize competition (Semi Final).</i> Shayan Amani, Jia Lin Hau , Chao Chi Cheng, Lekyang Sai Deep Learning facial recognition to avoid depression.	Apr 2018
Other Involvement	<i>Manchester City Marathon</i> by SNHU (1st in Co-ed Relay) <i>Seacoast Half Marathon</i> in Portsmouth (4th in division) Certified <i>PADI</i> Advanced Open Water Scuba Diver Certified <i>NAUI</i> Open Water Scuba Diver Passed Actuarial Science Exam P: Probability <i>Bloomberg Market Concepts (BMC)</i> Completion Member of <i>Pi Mu Epsilon</i> of National Honorary Mathematics Society	2016 2015 2013 2019 2018 2018 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)	