Chun Kai Ling

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EDUCATION

Computer Science Department, Carnegie Mellon University 2017-present
Ph.D. Student, Computer Science
Fields: Artificial Intelligence, Machine Learning, Game Theory.
Advisors: J. Zico Kolter, Fei Fang

National University of Singapore (NUS) 2011-2015
B.Eng.(Hons), First Class, Computer Engineering, GPA: 5.0/5.0
Minor in Mathematics, Exchange Program to HKUST.

RESEARCH

Research Assistant, Department of Computer Science, NUS 2017
Project: *Network Anomaly Detection*
Applied statistics and machine learning to cluster and identify potential anomalies in unlabelled netflow data.

Signal Processing Lab, DSO National Laboratories 2015-2016
Projects: *Computer Vision, Image Processing, Machine Learning, Optimization*
Applied machine learning and signal processing techniques for object detection, segmentation, image and video enhancement and super-resolution. System administrator for the lab.

Honors Dissertation, NUS 2014-2015
Project: *Planning and Learning in Spatiotemporal Environmental Phenomena*
Formulated, analyzed and evaluated the Gaussian Process Planning framework, a novel non-myopic, Bayes-adaptive model-based planning framework with applications in Bayesian Optimization and Active Learning. Published in AAAI '16.

Undergraduate Part-time Research Assistant, NUS 2014
Project: *Point Cloud Registration*
Performed feature extraction used to align noisy point clouds obtained via Structure from Motion. Experimented with standard LIDAR datasets and attempted to reproduce results on noisy point clouds obtained using SfM.

Undergraduate Research Opportunities Programme, NUS 2013-2014
Project: *Computational intelligence for MRI image segmentation*
Studied Markov random fields and experimented with t-mixture models to improve robustness in brain tumour segmentation.

Research Intern, Centre for Strategic Infocomm Technologies 2014
Project: *Static Analysis of Binary Executables*
Investigated and proposed methods to perform automatic function and instruction matching of x86 assembly code, in the absence of function symbols. Wrote tools to distinguish between code and data in disassembled binaries.

AWARDS

DSO National Laboratories
KiNETIC and Group accomplishment award for a classified project. 2016

National University of Singapore
Valedictorian for the class of Computer Engineering graduates. 2015
IES Gold Medal. Top graduating student. 2015
Lee Kuan Yew Gold Medal. Best graduate through the course of study. 2015
DSTA Gold Medal. Best final year student for Computer Engineering. 2015
NUS Faculty Scholarship. 2011-2015

Deans List for Semesters 1 through 6. Amongst top 5 % of students. 2011-2014
Alcatel Lucent Telecomm. Award. Best performance in a class for Networks. 2014
Top 2 Term Project for the class 'AI Planning and Decision Making'. 2014
Micron Prize. Top 2nd year student. 2012
Finalist in NUSACM iCode intra-college algorithmic programming competition. 2012

PUBLICATIONS

Chun Kai Ling, Fei Fang, J. Zico Kolter. What Game Are We Playing? End-to-end Learning in Normal and Extensive Form Games (IJCAI '18)

Chun Kai Ling, Kian Hsiang Low, and Patrick Jaillet. Gaussian Process Planning with Lipschitz Continuous Reward Functions: Towards Unifying Bayesian Optimization, Active Learning, and Beyond (AAAI '16)

WORKSHOP AND PREPRINTS

Chun Kai Ling, J. Zico Kolter, Fei Fang. What game are we playing? Differentiably learning games from incomplete observations. (NIPS '17 Deep Reinforcement Learning Symposium)

PRESENT

Working Papers
1. Differentiably learning extensive form games
2. Scoring Rules for Adaptive Multi-stage Questions

Teaching Assistant
Artificial Intelligence Methods for Social Good (08-737) Spring 2018

COURSEWORK

1. Analytical Performance Modeling (15-857) Fall 2017
2. Fundamentals of Learning from the Crowd (10-709) Fall 2017
3. Graduate Artificial Intelligence (15-780) Spring 2018

OTHER EXPERIENCE

Software Engineering Intern, Graymatics 2013
Wrote tools to speed up machine learning pipelines. Contributed to the implementation of a image-sharing social media platform. Wrote a desktop application to help end-users organize digital media.

Temporary Administrative Assistant, Health Promotion Board 2012
Temporary Tax Officer, Inland Revenue Authority of Singapore 2011
Air Defence Weapon Operator, 160 Squadron 2009-2011

HOBBIES

ProjectEuler. Hackerrank. Recreational Math. Chinese Chess. Starcraft.