

Anthony Li

Waterloo Street Block 262 #12-219, Singapore, 180262
anthony_li@u.duke.nus.edu • +65 92385863 <http://llja0112.github.io/bio.html>

EDUCATION

M.D. Doctor of Medicine, Duke NUS Medical School Aug 2015 – Jun 2019

- Thesis: Application of Machine Learning to Acute Coronary Syndrome patients to predict reinfarction and mortality

B.Eng. Electrical Engineering, National University of Singapore Aug 2009 – Jun 2013

- Awarded First Class Honors (GPA: 4.5/5)
- Thesis: Automated Prostate MRI Segmentation [[Thesis link](#)]
- Relevant Courses: Advanced Control Systems, Computer Vision, Analytical Methods in ECE

PROFESSIONAL EXPERIENCE

House Officer, Tan Tock Seng Hospital and Sengkang General Hospital Jul 2019 – Jun 2020

- General Medicine at Tan Tock Seng Hospital
- General Surgery at Sengkang General Hospital: Research on NEWS to improve timeliness of CTSP
- General Medicine at Sengkang General Hospital: Automated temperature reminders to staff of General Medicine Department

Research Medical Student, National Heart Center Singapore Sep 2017 – Jul 2019

- Performed research on predictive risk modelling for 3,885 Acute Coronary Syndrome (ACS) patients leveraging on ML methods such as XGBoost, MLP NN and LSTM RNN.
- Developed a novel method to improve ML model interpretability in ACS patients, thus identifying critical biomarkers (e.g. Creatinine, Total Cholesterol) for clinical intervention.

Software Engineer, Experimental Systems and Technology Lab Oct 2014 – Aug 2015

- Full stack development and deployment of applications for education under the Agile programming methodology. Technologies developed currently serves approximately 10,000 users.

Senior Officer, A*STAR, Science and Engineering Research Council Aug 2013 – Sep 2014

- Technology planning, grant administration and research management for Urban Systems Initiatives (S\$50 million grant), Satellite Initiatives and Infocomm Public Service Funding Research Projects.

RESEARCH

Publications

1. Sia S. X. Y., [Anthony Li](#), Hierarchical Module Classification in Mixed Initiative Conversational Agent System, *27th ACM Conference on Information and Knowledge Management* [[Paper link](#)]
2. Xiong W., [Anthony Li](#), Ong S.H., Sun Y. Automatic 3D Prostate MRI Segmentation Using Graph Cuts and Level Sets, *Pacific-Rim Conference on Multimedia (PCM) 2013* [[Paper link](#)]

Conference

1. [Anthony Li](#), AO. Sahlen, Improving clinical interpretation of extreme gradient boosted ensemble tree models of cardiac data with high proportions of missingness, *Machine Learning for Healthcare 2018* [Oral Presentation / Poster]
2. [Anthony Li](#), AO. Sahlen, Superior prediction of outcome in ischemic heart disease with machine learning than regression modelling: importance of missing values, *Singapore Cardiology Society 30th Annual Scientific Meeting* [Oral Presentation]
3. [Anthony Li](#), Deshpande A., Sarraf-Yazdi S. Making meaning out of disorienting dilemmas, assumptions and emotions: a prelude to reflective write-ups, *International Consortium of Longitudinal Integrated Clerkship 2017* [Oral Presentation]
4. Koong H. N., Bang D., Fung F. Y., [Anthony Li](#) A replay of our tutorials: A connection back to the soul of medical education, *International Consortium of Longitudinal Integrated Clerkship 2017* [Conference Workshop]

AWARDS	2nd place , NUS-NUHS-MIT Healthcare Datathon 2018, <i>NUS and MIT</i>	Jul 2018
	<ul style="list-style-type: none"> ▪ Leveraged on gradient boosted trees and neural networks to study complex pharmacological interactions and calculate risk of cardiovascular complications in 10,389 diabetic patients. ▪ Invited for call-for-proposals NUHS (in-progress) 	
	Special prize , Grow Asia Hackathon 2018, <i>Unilever, Bayer, MUFG and EastVentures</i>	Mar 2018
	<ul style="list-style-type: none"> ▪ Designed AI/ML smartphone application to solve traceability and sustainability in Indonesia's \$12B smallholder oil palm industry. 	
	3rd place , Analyticup 2017, <i>27th ACM CIKM</i>	Nov 2017
	<ul style="list-style-type: none"> ▪ Developed an RNN-LSTM based times series risk prediction model for DHL's temperature controlled supply chain for biomedical product shipments. 	
	1st place , Singhealth Hackathon 2017, <i>Singapore General Hospital</i>	Jan 2017
	<ul style="list-style-type: none"> ▪ Developed CHIT, a mobile application for communication and task coordination. 	
	A*STAR Borderless Award , <i>Science and Engineering Research Council</i>	May 2014
	<ul style="list-style-type: none"> ▪ Awarded for outstanding research contribution to A*STAR Data Analytics platform. 	
	Dean's List , <i>National University of Singapore</i>	Jul 2013
	<ul style="list-style-type: none"> ▪ Awarded to top 5% of engineering students in academic excellence in NUS Faculty of Engineering. 	
GRANTS	AM ETHOS Medical Student Fellowship Grant 2017 , <i>Singhealth Duke-NUS Academic Medicine Center</i>	Oct 2017
	<ul style="list-style-type: none"> ▪ Awarded a \$10,000 grant to study application of machine learning algorithms to Acute Coronary Syndrome patient PCI and echocardiograph datasets to predict patient mortality and morbidity. 	
PROJECTS	<p>Coagulopathy in patients with COVID-19 pneumonia Collaborators: A/Prof Ngiam Kee Yuan and Dr Bryce Tan from NUHS as part of 4CE consortium Hypothesis: Early anticoagulation ameliorate COVID-19 disease severity in patients with severe coagulopathy</p> <p>Hierarchical Module Classification Visualization Admin page to visualize decision making process behind patient bot responses. [Project link]</p> <p>Reflections platform Platform for medical students to write and consolidate reflections. [Project link] [Website link]</p> <p>Clinical knowledge platform Clinical knowledge made accessible in the form of checklists and approaches. [Website link]</p>	
CERTIFICATIONS	Deep Learning Specialisation (16 weeks) Coursera/DeepLearning.AI	Jun 2018
	<ul style="list-style-type: none"> ▪ [Certificate link] 	
	Probabilistic Graphical Models Specialisation (15 weeks) Coursera/Stanford University	Dec 2018
	<ul style="list-style-type: none"> ▪ [Certificate link] 	
PROGRAMMING	<p>Languages: Python, R, C, C++, Ruby, Octave/Matlab, HTML5, Javascript, CSS, SQL</p> <p>Deep Learning Frameworks: PyTorch, Tensorflow, Keras</p> <p>Packages: SKLearn, XGBoost, MICE, Caret, Pytorch</p> <p>Tools: Git, Latex, RStudio, Docker, Google Analytics, Jupyter Notebook, Atom</p> <p>Frameworks: Rails, Elasticsearch, Logstash, Kibana, JQuery, React, Flux</p>	
STUDENT LEADERSHIP	President , Duke NUS Medical Technologies Student Group	Aug 2017 – Aug 2018
	Vice President , Duke NUS Emergency Medicine Student Group	Aug 2017 – Aug 2018
	College Representative , Duke NUS Benjamin Sheares College	Aug 2017 – Jul 2019
	Clinical Peer Tutor , Longitudinal Integrated Clerkship	Oct 2017 – Aug 2018
	Teacher Advisor , Red Cross Youth NUS Chapter	Jun 2014 – Present

LANGUAGES English, Chinese: Expert business proficiency