LEE JIA YI Email: jiayilee97@gmail.com Mobile: +65 83077373

EDUCATION

National University of Singapore (NUS) **Aug 2016 – present**

- Bachelor of Electrical Engineering, Honours
- Expected Date of Graduation: May 2020
- Current Commitment: Studying
- GitHub: https://github.com/jiayilee97
- Personal Website: www.leejiayi.net
- Fluent Languages: English, Mandarin, Malay
- **ASEAN Undergraduate Scholarship:** obtained to study in NUS for 4 years
- **Honours Thesis (Individual)**

  √ Titled "Deep Learning Based Depth Mapping and Classification For Haptic Vision"

  √ Trained a General Adversarial Network to map the topography of an object pressed on a gel and a Convolutional Neural Network to classify the object's shape

  √ Achieved a Mean-Squared Error (MSE) of 0.021 for depth mapping and Cross Entropy Loss of 0.381 for classification

WORK/ACADEMIC EXPERIENCE

Lead Author, Needle Detection Research **2018-2020**

- Trained a LinkNet-based model that achieved real time 53% accuracy in predicting needle trajectory during an ultrasound biopsy
- Awarded Faculty of Engineering Research and Innovation Silver Award in 2019
- 2019 eMedic Competition Finalist
- Paper was accepted in the 2020 International Journal Computer Assisted Radiology[1]

Android App Publisher, Personal Project **2020**

- Created and published a job catalogue app on Google Play store (available at https://tinyurl.com/rsjqxwq) using SQLite

PLC Software Intern, Rockwell Automation **2019**

- Developed a RSLogix-based application that allows Rockwell employees to remotely monitor product tests by controlling a camera using a Universal Robot arm
- The application is coded in structured text, ladder logic and MS Excel Macros

Lead Developer, EGSC Coin Sorting Machine **2019**

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1 **Lee, Jia Yi,** Mobarakol Islam, Jing Ru Woh, TS Mohamed Washeem, Lee Ying Clara Ngoh, Weng Kin Wong, and Hongliang Ren. "Ultrasound needle segmentation and trajectory prediction using excitation network." *International Journal of Computer Assisted Radiology and Surgery* (2020): 1-7.

• Created a coin sorting machine using Autodesk Fusion and Arduino to teach mentally-disabled students how to handle cash transactions

Lead Product Maker, IEEE Hackathon **2019**

• Created an Arduino perfect pitch trainer to help piano students develop perfect pitch

Cloud Development Intern, NUS Bioelectronics Lab **2018**

• Set up an AWS IoT to gather the bluetooth data from a Raspberry Pi cardio module and upload the data onto a DynamoDB via NodeJS so as to monitor patient heart

Machine Learning Intern, Panasonic R&D Centre **2018**

• Trained a Caffe model that detected abnormal driver behaviour in real time with 93% accuracy

• Augmented input images via rotation and stitching to increase training data size

• Analysed the model performance using confusion matrix parameters

Developer, Hwa Chong Museum App **2014**

• Developed an interactive Adobe Flash software that lets visitors at Hwa Chong's museum listen to the school songs, view the music score and read the school history digitally

EXTRA-CURRICULAR ACTIVITIES

Volunteer, Casa Clementi Mentoring Program **2019-2020**

• Tutored underprivileged students in Math, Science and English

Lights Manager, Raffles Hall Musical Production **2016-2017**

• Controlled the spotlights for hall production at University Cultural Centre

Organiser, Very Special Arts (VSA) Project **2014-2015**

• Taught mentally-challenged students how to weave rattan baskets

ADDITIONAL INFORMATION

• **Text Decryption (EE3731C)**

  √ Implemented Markov Chain Monte Carlo to decipher a text

• **Stereo Reconstruction (EE4212)**

  √ Used Singular Vector Decomposition to reconstruct a scene from two images

• **Wirelessly-Controlled Pipelined Processor (CG3207)**

  √ Created a pipelined processor using Assembly Language and Verilog that can capture commands via UART and process them on a FPGA

• **Music**: passed Grade 8 ABRSM Theory and Practical