Yui Pan, YAU **Arthur**

arthur.yau@connect.ust.com | rlalpha | arthur-yau | Yui-Pan, Yau | **Research Interest: HCI, RL, XAI, Wearable Device, Robotic, ML Application**

Education

Hong Kong University of Science and Technology — *Hong Kong*

Doctor of Philosophy in Computer Science (Supervisor: *Prof Pan HUI*) — *Sep. 2019 - now*

- Focus on Human Computer Interaction, Reinforcement Learning, Explainable AI, Drone Interaction, Robot
- System and Media Laboratory (SyMLab) by HKUST and Deutsche Telekom

The Chinese University of Hong Kong — *Hong Kong*

Bachelor of Science in Computer Science — *Sep. 2016 - May. 2019*

- Focus on Reinforcement Learning, Software Development, Machine Learning, Robotic
- Robotic Team member

Publication

How subtle can it get? A Trimodal Study of Ring-sized Interfaces for One-handed Drone Control (Major Revision) — *UbiComp*

Yui-Pan YAU, Lik Hang LEE, Zheng LI, Tristan BRAUD, Yi-Hsuan HO, Pan HUI — *2020*

- ACM International Joint Conference on Pervasive and Ubiquitous Computing, 2020

MyoKey: Surface Electromyography and Inertial Motion Sensing-based Text Entry in AR — *PerCom*

Young D. Kwon, Kirill A. Shatilov, Lik-Hang Lee, Serkan Kumyol, Kit-Yung LAM, Yui-Pan YAU, and Pan Hui — *2020*

- IEEE International Conference on Pervasive Computing and Communications, 2020

One-thumb Text Acquisition on Force-assisted Miniature Interfaces for Mobile Headsets — *PerCom*

Lik Hang LEE, Yiming Zhu, Yui Pan YAU, Tristan BRAUD, Xiang Su, and Pan HUI — *2020*

- IEEE International Conference on Pervasive Computing and Communications, 2020

HIBEY: Hide the Keyboard in Augmented Reality — *PerCom*

Lik Hang LEE, Kit Yung LAM, Yui Pan YAU, Tristan BRAUD, and Pan HUI — *2019*

- IEEE International Conference on Pervasive Computing and Communications, 2019

Work Experience

The Hong Kong University of Science and Technology (HKUST) — *Hong Kong*

Summer Research Intern — *Jun. 2018, 2019 - Sep. 2018, 2019*

- Developed three single-handed tri-modal(Force,Touch,IMU) controller for drone manipulation
- Developed a language model for VR/AR input method correction
- Conducted on User Study experiment
- Analysed on User Behaviour via Sensor Data and User Feedbacks

Hong Kong Applied Science and Technology Research Institute (ASTRI) — *Hong Kong*

Summer Research Intern — *Jun. 2017 - Aug. 2017*

- Prepared car image dataset by scrapping, cleaning
- Trained and Tuned Deep Learning Model for car model classified
- Applied transfer learning method with inception-v3 to achieve 78 % on top-3 guess
- Compress Deep Learning model to be smaller and shorten inference time
- Deployed the model on Edge device like iPhone, Android Phone, Raspberry PI

Avatech Innovation Limited — *Hong Kong*

Software Developer — *May. 2016 - Sep. 2016*

- Assisted on modifying a Sandbox AR Visualization Device
- Developed some computer vision tool for conducting shape detection
- Built some AR/VR Demo Application

City University of Hong Kong — *Hong Kong*

Server-side Developer — *Oct. 2015 - Apr. 2016*

- Developed a Server-side API for a Mobile Game System
- Maintained and Deployed the Laravel(php) system to Heroku Cloud Platform
- Managed data on top of MySQL Database

Project, Study and Competition

Apply Deep Reinforcement Learning in Playing Sonic – Transfer Learning
Hong Kong

Project Lead *2018*

- **(Python, Tensorflow, Pytorch)** Reimplemented serval algorithms DQN, A2C, PPO from scratch. Established a pipeline to run environment parallelly, feature engineering input state, reward engineering, update model by aggregating trajectory from different threads, evaluation of agent performance and visualization of agent trajectories
- Tried different method to improve the sample efficiency (e.g. VAE as reward for handling sparse reward, asynchrony sampling and update) and over some bottleneck via Feature Engineering and Reward Engineering
- *Presentation Slide*

Similar Patient Search Engine at TMUxMIT Hackathon on Health
Taiwan

Software Engineer *2018*

- **(Python, HTML, GCP, BigQuery)** Developed a searching system on top of a larger scale medical dataset *(MIMIC)* for patient similar pairing
- Aims for young doctor to finding reference of patient before diagnosis. It achieved by Reinforcement Learning and Clustering Algorithm via tracking the doctor habit of searching and clicking to propose most similar patient
- Frontend use bootstrap and jQuery. Backend use Python Flask with Google BigQuery and serval ML framework
- The Fifth Position at TMUxMIT Hackathon on Health IoT
- *Presentation Slide*

CENTRAL Rat Race 2018 Virtual Reality Game
Hong Kong

Software Development Team Lead *2018*

- **(C#, Unity, VR)** Developed a Virtual Reality Obstacle Game by Unity Game Engine, and was responsible for implementing the game logic
- Exhibited the VR game at Exchange Square, Central, Hong Kong during June 2018

AnaeMirror Device
Hong Kong

Software and Hardware Engineer *2018*

- **(Python, OpenCV, JS, Arduino, Raspberry Pi, Firebase)** Developed a device to take frequent Hb measurements in haematology patients receiving chemotherapy in order to decrease complications and costs from untreated anaemia
- First Runner Up at HKUxStanford MedTech Hackathon 2018
- *Presentation Slide*

AI Dog Project
Hong Kong

Project Lead *2017-2018*

- **(Python, Tensorflow, JS, Firebase, GCP, Computer Vision, Raspberry Pi)** Developed a system for visual impaired people know around the world via state of the art computer vision technology such as image classification, object detection, image to natural description
- *Presentation Slide*

Image Classification- classifying car model by Image as ASTRI
Hong Kong

Project Lead *2017*

- **(Python, Tensorflow, Matplotlib, Scrapy, Numpy)** Prepared car image dataset by scrapping, cleaning dataset
- Trained and Tuned Deep Learning Model for car model classified
- Applied transfer learning method with inception-v3 to achieve 78 % on top-3 guess
- Compress Deep Learning model to be smaller and shorten inference time
- Deployed the model on Edge device like iPhone, Android Phone, Raspberry PI

NLP Irony Detection-"SemEval-2018 Task 3: Irony detection in English tweets
Hong Kong

Team Member *2017*

- **(Python, Tensorflow, Matplotlib, Pandas, Numpy)** Cleaned the text dataset, transforming them to numerical feature such as word2vec, sentiment neuron, modeling using traditional method such as navie bayes, decision tree, logistic regression. different Neural Network Structure with CNN, LSTM, boosting was also tried in the trial
- *Presentation Slide*

UniTime Social Network Platform on Google Play and Apple App Store
Hong Kong

Co-founder *2016-2017*

- **(C#, .Net, Ionic, Cloud, MSSQL, Python)** Developed a platform for college student to communicating and organizing activity among small group of people
- main functions include, voting for activity (time, location, content), external sharing link, real time chatroom, social platform functions (e.g. Post, Like, Comment)