

SHIH-YUAN YU

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EDUCATION

University of California, Irvine, CA, USA

Sept.2018 - Present

Ph.D in Electrical Engineering and Computer Engineering

National Taiwan University, Taipei, Taiwan

Sept.2012 - Jun.2014

M.S. in Computer Science and Information Engineering

Overall GPA: 3.83/4.00

Thesis title: "Energy-Aware Service Matchmaking in IoT Systems"

National Taiwan University, Taipei, Taiwan

Sept.2008 - Jun.2012

B.S. in Computer Science and Information Engineering

Overall GPA: 3.74/4.00

RESEARCH PROJECTS

Scene-graph Augmented Data-driven Risk Assessment of Autonomous Vehicle Decisions

This research project aims at augmenting the state-of-the-art subjective risk assessment systems with scene-graph based embedding techniques.

- Implemented the source code and prepare the datasets for publishing this research
- The source code is available at <https://github.com/louisccc/sg-risk-assessment>.

DCC - Deep Code Curator - funded by DARPA

A project that aims to expedite the process of Deep Learning research by utilizing the information of various modalities from scientific publications.

- Responsible for converting code repositories of scientific papers in Deep Learning domain into Resource Description Framework (RDF), creating a novel graph embedding architectures.
- I published two technical reports in UCI CECS system (http://www.cecs.uci.edu/pub_category/technical-reports/) for documenting down a part of progress on preprocessing.

Pykg2vec: A Python Library for Knowledge Graph Embedding

An open-source library for learning the representations of the entities and relations in knowledge graphs. It has included 20 algorithms and integrated Travis as the Continuous Integration framework.

- Responsible for planning, implementing, maintaining pykg2vec. It has already received more than 250 stars from GitHub Community members. <https://github.com/Sujit-0/pykg2vec>
- The library has already been documented as library paper and published on the Journal of Machine Learning Research (JMLR).

WuKong - Self-Reconfigurable Middleware for new M2M Programming Paradigm

- Enhanced and supported the context and proactivity features
 - Invented the colocation transformation scheme to resolve service mapping problem.
 - Constructed Java-Based Simulation Platform to evaluate algorithm performance.
- The research was accepted by MEDES2014 and awarded as **Best Paper Award**; by Journal JIDES2014; and by Conference iThings2014 and was given an oral presentation in Taipei.

Persuasive System Design - *Sweet Building Greeter* and *Sweetfeedback*

- Sweetfeedback - A desktop sensor/effector platform for Persuasive Computing
 - Constructed client-side by Arduino/Processing.org, built server-side by Python-Flask.
 - A research paper from this project was accepted by AAAI/SSS'13 as WIP (Work-In-Progress)

- SweetBuildingGreeter - A demonstration of Persuasive Computing Design on Public Space
 - Designed the workflow and deployed the systems for pilot studies on CMUSV/NTU.
 - The research was published in HCI International 2015 and given a presentation in Los Angeles.

PUBLICATION

Journal Articles

- [1] Shih Yuan Yu, Sujit Rokka Chhetri, Arquimedes Canedo, Palash Goyal, and Mohammad Abdullah Al Faruque. “Pykg2vec: A Python Library for Knowledge Graph Embedding”. In: *arXiv preprint arXiv:1906.04239* (2019).
- [5] Zhenqiu Huang, Kwei-Jay Lin, Shih-Yuan Yu, and Jane Yung-jen Hsu. “Co-locating services in IoT systems to minimize the communication energy cost”. In: *Journal of Innovation in Digital Ecosystems* 1.1-2 (2014), pp. 47–57.

Conference Papers

- [3] Ted Selker, Shih-Yuan Yu, Che-Wei Liang, and Jane Hsu. “SweetBuildingGreeter: A Demonstration of Persuasive Technology for Public Space”. In: *International Conference on Universal Access in Human-Computer Interaction*. Springer. 2015, pp. 475–486.
- [4] Zhenqiu Huang, Kwei-Jay Lin, Shih-Yuan Yu, and Jane Yung-jen Hsu. “Building energy efficient internet of things by co-locating services to minimize communication”. In: *Proceedings of the 6th International Conference on Management of Emergent Digital EcoSystems*. ACM. 2014, pp. 101–108.
- [6] Shih-Yuan Yu, Chi-Sheng Shih, Jane Yung-Jen Hsu, Zhenqiu Huang, and Kwei-Jay Lin. “Qos oriented sensor selection in iot system”. In: *2014 IEEE International Conference on Internet of Things (iThings), and IEEE Green Computing and Communications (GreenCom) and IEEE Cyber, Physical and Social Computing (CPSCom)*. IEEE. 2014, pp. 201–206.
- [7] Yi-Ching Huang, Bo-Lung Tsai, Chun-I Wang, Shih-Yuan Yu, Che-Wei Liang, Yung-jen Hsu, and Ted Selker. “Leveraging persuasive feedback mechanism for problem solving”. In: *2013 AAAI Spring Symposium Series*. 2013.
- [8] Yi-Ching Huang, Chun-I Wang, Shih-Yuan Yu, and Yung-jen Hsu. “In-HIT Example-Guided Annotation Aid for Crowdsourcing UI Components”. In: *First AAAI Conference on Human Computation and Crowdsourcing*. 2013.

Technical Report

- [2] Shih-Yuan Yu, Ahmet Salih Aksakal, and Sujit Rokka Chhetri adn Mohammad Abdullah Al Faruque. *Deep Code Curator-Technical Report on Code2Graph*. May 2019.

MENTORSHIP

TECHNICAL STRENGTHS

Programming Language: C/C++, Java, Python (Selenium, Django, Flask, TensorFlow)
Language: Mandarin, English, Taiwanese, Japanese

WORK EXPERIENCE

Software Engineer in MediaTek, HsinChu, Taiwan

Nov.2014-Sep.2018

- Lead the Modem System L1 Software Hard-Real-Time (HRT) Task force
 - Profile system HRT performace / Debug system HRT issues.
 - Coordinate teams of modem software owners to discuss and overcome issues.
 - Construct tools and warning system to facilitate system HRT performance verification.

- Achieve optimization for modem product in the aspect of idle rate, power and EMI bandwidth.
- Design Modem Dynamic Voltage Frequency Scaling (DVFS) Control Driver
- Design Stress Test Scheme to reduce manpower in the stage of DVFS driver verification
- Design/Implement Modem L1 RF center control scheduling driver
- Design next-generation DVFS control scheme through analyzing modem behavior by ML/DL tool
- Maintain and Debug GSM L1/LTE L1/Low-Power Sleep Control Driver

Research Assistant at CMUSV, Moffett Field, CA, USA

Jul.-Sep. 2012/2013

- Developed project Sweetfeedback and SweetBuildingGreeter.

AWARDS

A. Richard Newton Young Student Fellowship at DAC2019

Jun.2019

vAwards of MediaTek Core Values

Oct/Nov/Dec 2015, Dec 2016, Jan/May/Nov/Dec 2017

MediaTek Corp, HsinChu, Taiwan

Best Paper Award at MEDES2014

Sep. 2014

National Taiwan University Presidential Award (Rank: 7/129)

Spring. 2009