Curriculum Vitae

Personal Intro

Chinese Name: TSAI, YI-CHIA (蔡一嘉)
English Name: Richard Yi-Chia TSAI
Birth: 1994/08/16
Mobile: 0988335865
Email: yctsai5865@cs.nctu.edu.tw /richard.yctsai@gmail.com
Personal Website: http://cs.nctu.edu.tw/~yctsai5865/richardtsai/
Personal Blogger: https://richard-yctsai.blogspot.tw/
LinkedIn: https://www.linkedin.com/in/richard-yctsai/
Github: https://github.com/richard-yctsai
Speciality & Skill:
Computer Graphics and Visual Analytics on Robotic Recognition and Tracking Application. Internet of Things, Wireless Communication System, Machine Learning and Data Mining, Web Mobile Development.

Education

Advanced Degree:

National Chiao Tung University — Computer Science and Network Engineering
High-Speed Communication & Computing (HSCC) Lab   (94.33/100) 2016.09 - **Current**

Second Degree:

National ChengChi University — Computer Science
Mobile Computing & Network Communications Lab (I)   (86.54/100) 2012.09 - 2016.06

Speciality& Skill

Programming

Language: C, C++, C#, WPF windows programming, Java, R, Perl.
Functional/Script Language: UNIX Shell Script, Haskell, Scheme.
Internet of Things (IoT): Arduino Series, LinkIt, Raspberry Pi, Zedboard, BLE4.0, a wide variety of sensors' application and programming.
Data Mining: Association Rule Mining, Decision Tree, KNN, Naive Bayesian, Linear Regression, K-means, SVM, Neural Network, Clustering.
Web development: Front-end—HTML, CSS, JavaScript, jQuery.
Back-end—ASP.NET MVC architecture, Ruby on Rails, Node.js.
Mobile APP: Java—Android, Swift—iOS.

Tool

Github, UNIX, Android Studio, Xcode, MATLAB, R Studio, Eclipse, Atom, VIM, Visual Studio, etc.

English capability

Professional working proficiency on Listening, Speaking, Reading, and Writing.
TOEIC-Listening: 405, Reading: 465 Total: 870   19- February -2017

Experience

Pre-offer from Mobile Wireless Communication System dept. of MediaTek   Begin by 2018.12

Internship on Mobile Wireless Communication System dept. in MediaTek   2017.07 - 2017.08
Teacher Assistant — Arduino Platform for Hsinchu Science Park's Employees 2017.06 - 2017.07
Teacher Assistant — Embedded System in National Chiao Tung University   2017.02 - 2017.06
Internship on Applied System dept. in National ChengChi University   2015.09 - 2016.01
Teacher Assistant — Windows Programming in National ChengChi University   2015.02 - 2015.06
Internship in IT dept. in Yuan Hsin Digital Payment (Far Eastern Inc.)   2014.08 - 2014.09
Part-time employee of Computer Center in National ChengChi University   2013.10 - 2015.02

Visiting Student Researcher

UNIVERSITY OF CALIFORNIA, DAVIS — Computer Science   2018.06 - 2018.09
Visualization and Interface Design Innovation (VIDI) Lab   (Scheduled time)

From the invitation letter, Prof. Ma announce that he will provide an excellent work environment to me, his excellent students, postdoctoral researchers, and visiting scholars. He and his team have many collaborative research projects with other academic institutions and national laboratories. Also, he believe the fact that I will contribute to and benefit from the high level of interaction and exchange in his group; therefore, engaging me in his existing and new projects.

I truly believe, through the instruction of Prof. Ma, we will be able to accomplish some good research together. I am really looking forward to working with UNIVERSITY OF CALIFORNIA, DAVIS — Visualization and Interface Design Innovation (VIDI) Lab.

Exchange Student Program

Tsinghua University in Beijing — Computer Science and Technology   2016.02 - 2016.06
Shanghai Chiao Tung University — Computer Science and Technology   2014.07 - 2014.07

Taking curriculums, experiencing exotic culture, enhancing self-improvement, and expanding my own horizon are the best memory while studying at Tsinghua University in Beijing and Shanghai Jiao Tung University. Furthermore, I still keep in touch with those awesome friends worldwide and invite each other to hometown hospitably even though we went back our country individually afterward.

Thesis

* Eye On You: Fusing Gesture Data from Video and Inertial Sensors for Person Identification

We are informed that our paper has been accepted for the presentation at *IEEE International Conference on Robotics and Automation, May 21-25, 2018, Brisbane, Australia (ICRA 2018) and for inclusion in the conference proceedings.*

Person identification (PID) is a key issue in many IoT, Robotic and Automation applications. To enable reliable and remote PID, in this work, we present EOY (Eye On You), a data fusion approach that combines two kinds of sensors, a 3D depth camera and wearable sensors embedded with inertial measurement unit (IMU). Since these two kinds of data have common features, we are able to fuse them to conduct PID. To realize EOY, we develop fusion algorithms to address practical challenges, such as asynchronous timing and coordinate calibration. The experimental evaluation shows that EOY can achieve the recognition rate of 95% and is very robust even in crowded areas.

2017.06 - Current

* Time-Dependent Smart Data Pricing Based on Machine Learning

We received the acceptance and oral presentation invitation from the official of *The 30th Canadian Conference on Artificial Intelligence in Edmonton, Alberta, Canada, May 16-19, 2017 (CAIAC 2017)* and *The 21th Technologies and Applications of Artificial Intelligence, Hsinchu, Taiwan, November 25-27, 2016. (TAAI 2016).* In the meanwhile, we accomplished *The Chinese Patent Application* recently.

This paper proposes a new framework for time-dependent smart data pricing based on machine learning concepts. It consists of four core modules: *(1)* **network usage collection**, *(2)* **transition rule extraction**, *(3)* **future network usage estimation**, *and (4)* **utility maximization**. Moreover, we propose two efficient algorithms, **TDP-TR** and **TDP-KNN**. Experimental results on show that the proposed algorithms have robust performance under different parameter settings, which will benefit the related ISP field for academy and industry.

2016.07 - 2017.05

* (SiU-Bike) An integrated IoT technology's Smile Interactive U-Bike

This project was awarded *"Collegiate student research subsidy of Ministry of Science and Technology R.O.C."* and *came in first place at "Nation-wide college technology competition held by Ministry of Education R.O.C."* as well as *"Graduate project competition of NCCU CS."* On the other hand, we also hosted *a technology exhibition in Songshan Cultural and Creative Park, Taipei during 2015/10/17 (Sat.)~10/22 (Thur.)—"DCT 進行式"*.

Hey guys! We are SiU-Bike (Smile interactive U-Bike) team from the department of Computer Science of National Cheng Chi University in Taiwan. My team implemented a fantastic and smart bike (SiU-Bike) that can change its LED pattern on wheel depending on environmental detections.

SiU-Bike is similar to a digital advertising bike in the future, and we hope that emerging business value extends to other aspects. We plan to promote our eight-month creation, SiU-Bike, to the public, media and even the You-Bike system of Taipei City Government, realizing the vision of Smart City.

SiU-Bike, make a smile life!   2015.02 - 2016.01

(Please interview professor refer to DCT 進行式影片—01:00~01:05 [1] and SiU-Bike 宣傳影片 [2]. However, it is not that easy to type links, professor is recommended to click my personal website 個人網頁[3] and re-direct the page so that you can deeply review the achievement of SiU-Bike project in details. Thanks again.)

[1] https://vimeo.com/141442670
[2] https://youtu.be/-kJN9T2ADTQ
[3] http://cs.nctu.edu.tw/~yctsai5865/richardtsai/

Scholarship

1. Ministry of Science and Technology, R.O.C Scholarship for encouraging college students to conduct academic research.   2015.02 - 2016.01
2. NCCU Office of Research and Development Scholarship for encouraging college students to conduct academic research.   2015.02 - 2016.01
3. NCCU Hsin Chuan Scholarship （Honor to be awarded for four semesters）2014.10 - 2016.06

Organization Position

National Chiao Tung University:

Chief Leader of NCTU World Model United Nations Contingent in Montreal, Canada,
USG Public Relations of Taiwan Model United Nations Conference,
Member of NCTU Model United Nations.   2016.10 - 2017.03

Tsinghua University in Beijing:

Club of Photography,
Club of Public Speaking in English,
Club of Cantonese and Hong Kong Culture.   2016.02 - 2016.06

National ChengChi University:

Vice President, Minister of Public Relations, Leader of Fire Dance Team
in Alumni Association of Chiayi & Yunlin Area   2013.02 - 2014.06
Correspondent of Alumni Interview and Academic Conference of NCCUCS
http://nccucs.blogspot.tw   2013.10 - 2015.02
Vice Minister of Secretary of NCCU Taiwan China Strait Association   2015.02 - 2015.06
Member Player of Basketball, Baseball team in NCCUCS   2014.09 - 2016.01

Mottoes

1. Nothing ventured, nothing gained!
2. If you have faith, there is going to be a way. God helps those who help themselves!
3. 該奮鬥的年齡不要選擇了安逸！