

Peter (Kuan-Ting) Yu

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RESEARCH INTERESTS

Service Robotics, Mobile Robotics, Computer Vision, Object Recognition, AI

EDUCATION

- Massachusetts Institute of Technology**, Cambridge, MA U.S.A 09/2013 –
PhD in Electrical Engineering and Computer Science (EECS)
Advisor: Prof. Seth Teller
- National Taiwan University (NTU)**, Taipei, Taiwan 09/2010 – 06/2012
M.S in Computer Science and Information Engineering (CSIE)
GPA: 4.26/4.30
- Carnegie Mellon University (CMU)**, Pittsburgh, PA U.S.A 01/2010 – 05/2010
Exchange Student in Electronic and Computer Engineering (ECE)
- National Chiao-Tung University (NCTU)**, Hsinchu, Taiwan 09/2006 – 06/2010
B.S in Computer Science (CS)
Average Score: 93.74/100 (Rank: 2/180)

SELECTED PUBLICATIONS

- [1] **Kuan-Ting Yu**, Shih-Huan Tseng, and Li-Chen Fu, “Learning Hierarchical Representation with Sparsity for RGB-D Object Recognition,” *IEEE Int. Conf. on Intelligent Robots and Systems*, Vilamoura, Portugal, Oct. 2012. (Oral)
- [2] **Kuan-Ting Yu**, “Human-Context Mapping for Human-Centric Robot Service in Office Environment,” **Master Thesis**, NTU, Jul. 2012. (**Excellent Thesis Award, Robotics Society of Taiwan**)
- [3] **Kuan-Ting Yu**, Feng-Chih Liu, Shih-Huan Tseng, Li-Chen Fu, and Yu-Kuen Tsai, “A Robust Visual SLAM System using Multiple Monocular Cameras,” *Proc. of International Symposium on Robotics*, Taipei, Taiwan, Aug. 2012. (Oral)
- [4] Shih-Huan Tseng, Shiang-Hung Cheng, Jiun-Yi Li, **Kuan-Ting Yu**, and Li-Chen Fu *et al*, “Intelligent Interactive Robot in an Office Environment,” *Proc. of International Conference on Service and Interactive Robotics*, Taichung, Taiwan, Nov. 2011. (Oral)
- [5] **Kuan-Ting Yu**, Jia-Yuan Yu, Feng-Chi Liu, Shih-Huan Tseng, Li-Chen Fu and Hsiang-Wen Hsieh, “An Integrated Feature Selection Strategy for Monocular SLAM,” *IPPR Conference on Computer Vision, Graphics, and Image Processing*, Chia-Yi, Taiwan, Aug. 2011. (Oral)
- [6] **Kuan-Ting Yu**, Chi-Pang Lam, Ming-Fang Chang, Wei-Hao Mou, Shi-Huan Tseng, and Li-Chen Fu, “An Interactive Robotic Walker for Assisting Elderly Mobility in Senior Care Unit,” *Proc. of IEEE Workshop on Advanced Robotics and Its Social Impacts*, Seoul, Korea, Oct. 2010. (Oral)

**AWARDS and
HONERS**

- Study Abroad Scholarship, Ministry of Education, Taiwan** 2013
- Academic Achievement Award, NCTU** (top-3 students each semester in class) 2006-2010
Received this award in all semesters, except the last semester when I was exchanged to CMU
- Honorary member, Phi Tau Phi Scholastic Honor Society, Taiwan** 2010
Awarded to top 3% undergraduate students in Dept. of CS, NCTU
- Shun-Yi Chu ZyXEL Scholarship** 2009
Awarded to 2 undergraduates in Dept. of CS, NCTU
- Thirteenth Place, ACM/ICPC Asia Regional Contest, Tokyo, Japan** 2007
- First Place, NTU and NCTU Joint Programming Contest** 2007
- Golden Bamboo Scholarship** 2006
Awarded to the **best admitted** student in Dept. of CS, NCTU

**RESEARCH
PROJECTS**

- Context-Aware Office Service Robot, NTU** 09/2011-07/2012
Supervisor: Prof. Li-Chen Fu / Granted by National Science Council of Taiwan
Proposed learning based representation for object recognition [1]. Developed methods to infer human context in office environment; proposed *human context mapping* to record human living pattern [2].
- vSLAM – Simultaneous Localization and Mapping using monocular camera, NTU** 2010-11
Supervisor: Prof. Li-Chen Fu / Granted by Industrial Technology Research Institute of Taiwan
Improved the vSLAM algorithm by fusing Multi-camera and GPU parallelization [3]
- DogBOT - Robotics Class Final Project, NTU** 2011
Built a robot that can interact with users using gestures and chase colored ball
Served as team leader and implemented ball tracking program using camshift algorithm
Awarded **1st** place out of 8 teams in on-site demonstration
- Multi-label classification with missing data - Machine Learning Class Final Project, NTU** 2011
Applied SVM, random forest, voting, regression on the classification problem
Ranked **3rd** out of 42 teams on the Hamming Loss track
- ShopSmart - Online Review Aggregator, Distributed System Class, CMU** 2010
Built a distributed, fault-tolerant online review mining/query system using MapReduce and Corba
- Chirp - Mobile Voice Blogging System, Senior Project, NCTU** 2009
Supervisor: Prof. John Kar-kin Zhao / Granted by National Science Council of Taiwan
Developed a voice sharing, and recognition system using Android Client and .NET Server
Awarded **1st** Place in The 14th Taiwan Collegiate Information Service Innovation Competition
- SEEDS-Solar Energy-based Embedded Distributed Server farm, Sophomore Project, NCTU** 2007-08
Supervisor: Prof. Shiao-Li Tsao / Granted by National Science Council of Taiwan
Advanced into the final 200 teams in Microsoft Imagine Cup Embedded system competition
- Vision - a self-developed 3D graphics engine and interface, High School Special Project** 2006
Awarded **2nd** Prize and Intel Excellence in Computer Science Award in Taiwan International Science Fair

**COMPUTING
SKILLS**

- Programming:** C/C++/C#, Java, VB, Matlab, OpenCV, CUDA, Python
- Computer Systems:** Network, Windows, Linux, and Android Programming

**WORK
EXPERIENCES**

- Coach, Programming Contest Team, Taipei Fu-Hsing Private High School** 02/2011-06/2012
Organized and taught courses for ~10 high school students to compete in programming contest
- Teaching Assistant in Robotics, CSIE, NTU** 09/2011-01/2012
Designed hands-on homework, e.g. stacking blocks using robot arm and camera, grading, office hours
- Part-time Programmer, MBA Student Startup Group, CMU Heinz School** 03/2010-05/2010
Developed a monitor system on ambulance which collects physical signals and sends them to hospital
- Programmer, Syntec, Taiwan** (PC based Computer-Numerical-Control (CNC) manufacturer) 2009
Developed Visual CAD Tool for industrial CNC systems using C#
- Microsoft Student Partner, Microsoft Taiwan** 2007-2008
Delivered 8 Technical Talks on Windows Mobile Programming in Taiwan universities
Awarded Microsoft Most Valuable Professional in Visual Basic 2008
Served as MSP Official Website Project Manager
- Intern, mPro-3G Team, Chung-Hwa Telecom, Taiwan** 2008 summer
Built online storage service for smart phone users
Developed web service API & web interface using ASP.NET & AJAX

ACTIVITIES

- Founding member and Webmaster of NTU Online Community** 08/2012 - 12/2012
An online multimedia community for NTU students, faculties and clubs
- Volunteer, Dwen An Social Welfare Foundation, Taiwan** 2006 - 2012
Served as counselor in Youth Leadership Development and Melancholy Healing activities
Participated in a 13-day mission of circulating Taiwan with bicycles to visit 12 partnered organizations
- Member, Robot Orchestra Team, Robot Club, CMU** 2010
Used WiiMote to conduct a robot orchestra using conducting gestures
- Member and Activity Director, Flamenco Club, NCTU** 2008
Performed in School anniversary and arranged the annual performance
- Manager, Student Electronics Group Buying Activity, Student Union, NCTU** 2006

REFERENCES

- Prof. Seth Teller — teller@csail.mit.edu, +1-617-258-7885
PhD advisor at CSAIL MIT
- Prof. Li-Chen Fu — lichen@ntu.edu.tw, +886-2-2362-2209
Master advisor at NTU, Distinguished Professor and IEEE Fellow
- Prof. Chieh-Chih Wang — bobwang@csie.ntu.edu.tw, +886-2-3366-4888 ext. 522
Mobile robotics instructor at NTU, master thesis committee member