Hsiao-Wei Tung

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EDUCATION

University of Pittsburgh, Pittsburgh, PA — Aug. 2016 – Apr. 2018
Master of Science, Electrical and Computer Engineering, GPA: 3.94/4.0
- Coursework: Machine Learning, Computer Vision, Embedded Computer System

National Taipei University of Technology, Taipei, Taiwan — Sep. 2011 – Jun. 2015
Bachelor of Science, Electrical Engineering

TECHNICAL SKILLS

- Programming Languages: Python, C++, MATLAB, HTML, CSS, JAVA, SQL
- Tools: Tensorflow, Caffe, Arduino, Latex, Jupyter, Eclipse, OpenBCI, Blender
- Languages: Mandarin Chinese(Native), English(Fluent)

WORK EXPERIENCE

Carnegie Mellon University, Machine Learning Department, Pittsburgh, PA — May. 2017 - Aug. 2017
Research Assistant Intern
- Designed and implemented the "Video of Face Transfer" project with Prof. Katerina Fragkiadaki.

Ihoin Electronics Company, New Taipei City, Taiwan — Jan. 2014 – Feb. 2014
Software Engineer Intern
- Developed an Android app of food order and delivery service using JAVA and Eclipse.

PROJECT EXPERIENCE

Self-supervised Learning of Motion Capture, NIPS2017, Spotlight — Mar. 2017 – Dec. 2017
- Invented an end-to-end motion capture neural network model to recover 3D human mesh from a single monocular video using Python and Tensorflow.
- Pre-trained the model with synthetic data and fine-tuned it with self-supervised losses on real world video.
- The 3D mesh prediction result on H3.6M real video dataset reduced the per-joint error rate by 83.4%.

Face Motion Prediction by Brain-wave Detection, ICORR 2017 — Feb. 2017 – Oct. 2017
- Constructed a hand-free, light-weight, wearable device to detected user's brain-wave using OpenBCI EEG sensors.
- Predicted the user's face motion as controller by applying machine learning classification algorithms on MATLAB.

Brain-wave Controlled Robot Car, IEEE SMC BCI Hackathon 2017 — Oct. 2017 – Oct.2017
- Created a first-person-view manipulator robot car controlled by wearing three OpenBCI EEG sensors, VR headset, and two Myo gesture control armbands that reads muscle's electrical activity.
- Utilized Face Motion Prediction to control the robot car and applied Myo armband to control the manipulator.

Video of Face Transfer, CMU Intern — May. 2017 – Aug. 2017
- Transferred faces in an input video towards female, male, young equivalents using Generative Adversarial Network.
- Built a neural network model that made the video of transferred faces smoother by using Python and Tensorflow.

Future Video Prediction, University of Pittsburgh — Feb.2017 – Apr. 2017
- Modeled an Encoder and Decoder neural network structure and trained the model with frame pairs to predict next video frame using Python and Caffe.

Being On Your Way, University of Pittsburgh — Sep. 2016 – Dec. 2016
- Devised an embedded wearable equipment to lead road for blind people by detecting obstacles nearby and informing the user about the location of the obstacles with Arduino board and ultrasonic sensors.

PUBLICATION

[1] Fish Tung, **Hsiao-Wei Tung**, Ersin Yumer, Katerina Fragkiadaki. Self-supervised Learning of Motion Capture, NIPS 2017, spotlight

[2] Ker-Jiun Wang, Lan Zhang, Bo luan, **Hsiao-Wei Tung**, Quanfeng Liu, Jiacheng Wei, Mingui Sun, Zhi-Hong Mao. Brain-Computer Interface Combining Eye Saccade Two-Electrode EEG Signals and Voice Cues to Improve the Maneuverability of Wheelchair, ICORR 2017

AWARDS

- **Best Hardware Hack**, 2018 MLH The Pitt Challenge Hackathon, Pittsburgh, PA — Feb. 2018
- **2017 GPSG Travel Grant,** University of Pittsburgh Graduate &Professional Student Government, Pittsburgh, PA — Dec. 2017
- **2017 NIPS Travel award**, 2017 Neural Information Processing Systems Conference, Long Beach, CA — Dec. 2017
- **1st Place Winner**, 2017 IEEE SMC Brain-Computer Interface Hackathon, Banff, Canada — Oct. 2017
- **Partner Prize**, 2017 CMU/Emirates Machine learning & AI Hackathon, Santa Clara, CA — Sep. 2017