Wei-Hsiang Wang (王威翔)

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EDUCATION

National Taiwan University (NTU) **Taipei, Taiwan**
M.S., Mechanical Engineering Expected Aug. 2018
- Thesis title: "Configurations of Conventional Springs with Minimized Spanning Space on Statically Balanced Planar Articulated Manipulators"
- Overall GPA: 3.71

B.S., Mechanical Engineering June 2016
- Mechanism design related GPA: 3.75 (6 courses)
- Graduate level courses GPA: 3.60 (16 courses)

COMPUTER SCIENCE RELATED COURSES

Basic:
Data Structure and Programming, Database Management System – from SQL to NoSQL

Machine Learning:
Machine Learning Foundation, Machine Learning Techniques, Coursera Deep Learning Specialization (Certificate)

Robotics:
Robotic Sensing & Control, Microprocessor Controlled Systems

RESEARCH EXPERIENCE

Intellectual Property Analysis & Innovative Design Laboratory Aug. 2016 – Aug. 2018
Graduate Researcher (Advisor: Prof. Dar-Zen Chen)
- Conducted research developing systematic procedures on a serial manipulator for installing springs with less opportunity of interference and easier to be encased.
- Accomplished patent analysis projects in the fields of additive-manufactured medical devices and renewable power systems.
- Built a Python web crawler with an interface for U.S. Patent Database [Github] and a text mining program in R for searching the patent-paper-pair with highest text similarity.

Advanced Power Research & Development Center Feb. 2016 – Jan. 2017
Project Member (Supervisor: Prof. Jung-Ho Cheng & Prof. Kang Li)
- Built a lane detection program using OpenCV (C++) for assisting navigation of autonomous car.
- 3D modeling of the autonomous car with CATIA.

SELECTED PROJECTS

Mobile Robot Sep. 2017 – Jan. 2018
- Built an autonomous SLAM robot with Robot Operating System (ROS).
- Mainly responsible for the hand gesture recognition using OpenCV (skin detection) combined with Kinect skeletal tracking.

Human Motion Analysis Programming Feb. 2017 – June 2017
- Implemented MATLAB programs with a motion capture system and force plate for motion analysis, including motion tracking, evaluation of body balance, and derivation of joint forces and torques of the lower body. [Github]

Retractable Suspension Mechanism Design with Graphical Interface Mar. 2016 – July 2016
- Built a MATLAB GUI for aiding mechanism design of retractable double-wishbone suspension, which can display the movement and check interference under different design variables.

HONORS & AWARDS

Outstanding Award in Microprocessor Controlled Systems, Dept. of ME, NTU June 2016
- Authored course project "Automatic Tuner using Renesas RX210" utilized FFT sound analysis in a motor-actuated tuner, which can be easily adjusted and adapted for most string instruments with pegs. It is one of best three projects selected from 15 competitors and was presented to Renesas Electronics, Taiwan.

Outstanding Award in Machine Design Theory, Dept. of ME, NTU Jan. 2015
- Ranked 2nd both in self-made RC hovercraft racing competition and affiliated best report contest (18 teams participated).

Stipend Award, NTU June 2014
- Won 300 USD for term report from regular seminar held to expand NTU Public Address Team's acoustic knowledge.

LEADERSHIP & ACTIVITIES

Coordinator, PyTorch Taipei Feb. 2018 – Sept. 2018

- Held weekly meetups focusing on papers discussion and programming implementation of Deep Learning techniques.
- Gave tutorial presentations on the topics of Neural Style Transfer & Single Shot Multibox Detector (SSD).

Teaching Assistant, Google AI Boot Camp July 2018

- Guided participants to build deep learning programs in Tensorflow with Google Colaboratory.

Vice Director & Audio Technician, NTU Public Address Team June 2013 – June 2014

- Provided technical support for stage audio and lighting systems for artistic activities held at NTU.
- Gave lectures to team members & performers and administrated qualification test for using the equipment.

Leader of Equipment Section, NTU Guitar Club June 2014 – June 2015

- Lead a 5-men team responsible for the management of audio equipment and the procurement of instruments.

TECHNICAL SKILLS

Programming Languages: Python (Tensorflow, Keras, PyTorch, OpenCV, PyQt, ROS), MATLAB, C, C++, C#, R, MySQL

Micro-controller: Raspberry Pi, Renesas RX210, Arduino

CAM/CAE Software: SolidWorks, AutoCAD (2D, 3D, AutoLISP), CATIA

Documentation: Microsoft Office, EndNote, LaTex, Markdown

Operating Systems: Linux (Ubuntu, Raspbian), Windows

Languages: Mandarin Chinese (Native Speaker), English (Fluent), Japanese (Basic)

VOLUNTEER

NTU Bike Week Mar. 2015

Volunteer Mechanic

- Received training on bike maintenance and offered free service on the NTU campus for a week.

Coursera Global Translator Community Jan. 2018 – Present

English -- Traditional Chinese Translator

- Translating the course “Sequence Models” of Deep Learning Specialization given by Prof. Andrew Ng, Deeplearning.ai.