Yi-Yao (Darren) **Huang**

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Education

Bachelor's of Science, Electrical Engineering, National Taiwan University

Senior Student *09.2013 - PRESENT*

- GPA: 4.0/4.3. Relevant Classes: Deep Learning and Structural Learning, Intelligent Conversation Bot.
- Awards: 6th in General Category out of 300 participants at 2015 NTU Annual Hackathon.

University of California, Santa Barbara

Exchange Student *09.2016 - 12.2016*

- Participated in Natural Language Processing research under Prof. William Wang (chair of the NLP lab at UC Santa Barbara).
- Published an EMNLP paper: *Deep Residual Learning for Weakly-Supervised Relation Extraction* (see below).

Publications

Deep Residual Learning for Weakly-Supervised Relation Extraction

First-author, published in EMNLP 2017 *11.2016 - 04.2017*

- Considered deeper convolutional neural networks for weakly-supervised relation extraction using residual learning.
- Implemented using Tensorflow and get the state-of-the-art result **(79% P@100)** on NYT dataset.

BackHand: Sensing Hand Gestures via Back of the Hand

co-author, published in UIST'15 pages 557-564 *01.2015 - 06.2015*

- Explored a new signal source, the back of hand, for hand gesture recognition to recognize gestures at **95.8%** accuracy.
- Built an analog circuit and used Arduino, LIBSVM and Processing to analyze data.

Mitigating the Impact of Speech Recognition Errors on Chatbot using Sequence-to-sequence Model

First-author, published in ASRU 2017 *01.2017 - 06.2017*

- Formulated the ASR (automatic speech recognizer) error issue on spoken dialog systems as a **domain adaptation problem.**
- Used Tensorflow to implement the dialogue sequence-to-sequence model.

Attention-Based Recurrent Neural Network Models for Joint Semantic Element Detection and Relation Classification

First-author, under reviewed in IJCNLP 2017 *01.2017 - 06.2017*

- Introduced an end-to-end attention-based recurrent neural network for joint semantic element detection and relation classification.
- Implemented using Tensorflow and built an attentive bidirectional LSTM model.

Experience

UmboCV (Startup) *Taipei, Taiwan*

Computer vision Engineer & Deep learning researcher (Full time Intern) *Jan. 2017 - Exp. Jan. 2018*

- **Object Detection**:
  - Designed an object detection system and developed **Faster RCNN and region-based fully connected networks**.
  - Collaborated with senior engineers to help customers to detect humans and cars.
  - Implemented using pytorch and built the basic utility module with CUDA.
- **Action Recognition**:
  - Built an action recognition algorithm based on **C3D and two-stream models.**
  - Helped the company to setup action recognition system.
  - Implemented using pytorch and used OpenCV to process input data.
- **Evaluation System**:
  - Developed a Slack bot that automatically runs computer vision analysis routines on uploaded videos.
  - The evaluation tool helps sales to generate demo videos on their own.
  - Implemented with Slack python API , unit tested with pytest and deployed automatically by **Docker and Jenkins**.
- **Mechanical Turk**:
  - Built a HIT front-end interface for human segmentation labeling.
  - Helped the company to collect data for deep learning research at a large scale.
  - Implemented using **react-js, node-js, material-ui** package and deployed the tool on MTurk website.