# Yi-Yao (Darren) Huang

darrenyaoyao.huang@gmail.com https://darrenyaoyao.github.io/ darrenyaoyao darrenyaoyao.huang

## Education

**Bachelor's of Science, Electrical Engineering, National Taiwan University** — *Taipei, Taiwan*

*09.2013 - PRESENT*

- GPA: 3.9/4.3. Relevant Classes: Machine Learning and Having It Deep and Structured, Intelligent Conversation Bot.
- Built a music chatbot and won the 1st prize out of 13 teams in the class "Intelligent Conversation Bot".
- Awards: 6th in General Category out of 300 participants at 2015 NTU Annual Hackathon.

**University of California, Santa Barbara** — *Santa Barbara, California, Unites States*

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).

## Publications

**Deep Residual Learning for Weakly-Supervised Relation Extraction** — *NLP lab, UCSB*

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

- Applied deeper convolutional neural networks with residual learning for weakly-supervised relation extraction.
- Implemented using Tensorflow and get **3%** improvement and become the state-of-the-art result **(79% P@100)** on NYT dataset.

**Mitigating the Impact of Speech Recognition Errors on Chatbot using Sequence-to-sequence Model** — *Speech Processing lab, NTU*

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 and get **0.15 BLEU** score improvement.

**BackHand: Sensing Hand Gestures via Back of the Hand** — *mHCI lab, NTU*

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.

## Experience

**UmboCV (A startup around 30 people applies AI on security cameras.)** — *Taipei, Taiwan*

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

- **Action Recognition**:
  - Built an action recognition algorithm based on **3D Convolutional Network and Two Stream Model**.
  - Led a team to build up the Fight Detection system which accounts for 10% of the company annual revenue.
  - Independently handled complete product development, from data collection, model training, to final product launch.
- **Object Detection**:
  - Designed an object detection system and developed **Faster RCNN and region-based fully connected networks**.
  - Implemented using pytorch and built the basic utility module with CUDA.
- **Evaluation System**:
  - Developed a Slack bot that automatically runs computer vision analysis routines on uploaded videos.
  - Implemented with Slack python API , unit tested with pytest and deployed automatically by **Docker and Jenkins**.
- **Mechanical Turk**:
  - Built human segmentation labeling tool which helped the company collect over a million images for deep learning research.
  - Implemented using **react-js, node-js, material-ui** package and deployed the tool on MTurk website.

## Skills

**Researches** Natural Language Processing, Deep Learning for NLP, Computer Vision, Deep Learning for CV, Information Retrieval, Human Computer Interaction, Deep Learning, Machine Learning, Reinforcement Learning

**Tools** Pytorch, Tensorflow, ReactJS, NodeJs, Django, Docker, Jenkins, MongoDB, MySQL, CUDA, Unit Test, Git, Arduino, Python, C++, Javascript, HTML, CSS