Ting-Wei Wu

: waynewu6250.github.io
: waynewu@berkeley.edu | : Github: waynewu6250 | : +886-910-892-209 | : ting-wei-wu

Looking for 2020 Summer Software R&D / Engineering Intern Position

Education

Georgia Institute of Technology — Atlanta, GA
Doctor of Philosophy in Electrical & Computer Engineering (Bioengineering) — *Aug. 2019 – May. 2023*

University of California, Berkeley — Berkeley, CA
Master of Engineering in Bioengineering; GPA: 3.83 — *Aug. 2017 – May. 2018*

National Taiwan University — Taipei, Taiwan
Master of Science in Electronics Engineering; GPA: 4.00 (4.22/4.3) — *Feb. 2016 – Jul. 2017*
Bachelor of Science in Electrical Engineering; GPA: 3.82 (3.93/4.3) — *Sep. 2012 – Jun. 2016*

Experience

- **BioMEMS RNA-Seq Droplet Device** — Berkeley, CA
  UC Berkeley Streets Lab Capstone Project — *Aug. 2017-May. 2018*
  - **Chip Design** : Expedited high-throughput droplet enclosing hydrogel beads with qualitative ML analysis.
- **Integrated Cell-sorting Sensor System** — Taipei, Taiwan
  NTU CMOS Biotechnology Lab Graduate Research — *Jan 2014 - Oct 2016*
  - **Device Fabrication & Signal Processing**: Devised a new cell sensor created by soft-lithography, evaporation, using impedance flow cytometry to classify cell properties (size, position, type) with frequency-dependent analysis.
  - **ML Data Analysis**: Utilized clustering (Naive-Bayes, GMM, K-means, NN) and MATLAB to extract impedance data for cell library database creation.
  - **Paper Contributions**: Published work in ACS Sensors, MicroTAS '17, IEEE NEMS '17 and IMCS '16.
- **Intelligent Baby Monitoring System** — Taipei, Taiwan
  R&D Intern at Getac Technology Corp. — *Jul.-Aug. 2014*
  - **Project Management**: Led 10+ person multi-disciplinary project team with senior engineers to design a wireless monitoring device using a raspberry pi controller for observing infant behavior.
  - **Raspberry Pi**: Controlled Raspberry Pi GPIO with python and IC chip layout for cpu operation and exterior mechanical design using SolidWorks and AutoCAD.

Selected Projects

- **StackBoxer**: A fancy chatroom with a **AI chatbot** for stackoverflow code queries (StackBot) and daily conversations (MovieBot, ChickBot). Team work to build up customized 2-layer seq2seq model with attention mechanism and policy gradient reinforcement in Django+Docker+nginx server on *chatbox.cc*.
- **DeepEyeNet**: Developed a keyword-reinforced image captioning model including encoder and transformer approaches and generate medical prescriptions for retina image queries. ACMMM, TMM, AAAI 2019 paper contributions.
- **Naruto character generation by AI**: Simulated the style drawing of Naruto figures to construct new naruto characters completely by artificial intelligence with deep convolutional generative adversarial networks (GAN), w-GAN.
- **Fire Data Scraping and Database Management**: Database management and scraping with Excel VBA, python (requests, selenium, bs4), SQL for fire event information processing.
- **Chinese lyrics generation with popular singer style**: Trained machine to generate Chinese lyrics based on composed songs from four popular singers in Taiwan by pytorch.
- **Sales Prediction on "1C" Competition**: Kaggle competition for predicting next-month sales for each item for the largest Russian software firm based on time-series dataset.Implemented data cleaning approach, mean-encoding for feature generation and final prediction with xgboost library.

Programming Skills

- **Languages**: Python, Matlab, C++, SQL, Verilog, VBA, Java
  Technologies: Docker, Flask, Pyspark, AWS, AutoCAD, 3ds Max, Photoshop, COMSOL, Microfabrication