Yi-Te (Eeder) Hsu

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Education

Johns Hopkins University (JHU) — Baltimore, Maryland
Master of Science in Computer Science; GPA: 3.77/4.00 — *Aug. 2019 – Dec. 2020*
- Relevant Courses: Machine Translation; Blockchains and Cryptocurrencies; Human-Computer Interaction; Machine Learning; Artificial Intelligence; Human Language Technology; Information Retrieval and Web Agents; Computer Networks

National Taiwan University (NTU) — Taipei, Taiwan
Bachelor of Science in Electrical Engineering; GPA: 3.85/4.00 (Last 60 units) — *Sep. 2012 – Jan. 2017*
- Relevant Courses: Algorithms; Data Science; Machine Learning; Data Structure and Programming; Computational Methods and Tools for Data Science; Discrete Mathematics; Psychoinformatics and Neuroinformatics; Probability and Statistics
- NTU Creativity and Entrepreneurship Program; NTU Leadership Development Program

Professional Experience

Machine Learning Engineer Intern — California, United State
Apple Inc. — *Jun. 2020 - Aug. 2020*
- Worked in Machine Translation team, which released native Translation app with iOS 14.
- Surveyed and implemented the state-of-the-art model efficiency techniques for deep neural networks.
- Proposed a more efficient inference architecture by applying knowledge distillation, simpler architecture and pruning [1].
- Achieved up to 109% speedup and reduced the number of parameters by 25% while maintaining the same translation quality.

Research Assistant — Taipei, Taiwan
Academia Sinica — *Feb 2018 - Jul 2019*
- Proposed a quantized neural network (EOFP-QNN) [2] that achieves a 4x compression rate by quantizing floating-point weights.
- Developed IA-Net [5], which simultaneously compresses the model and accelerates the inference process by 1.2x.
- Integrated and optimized deep learning-based models (LSTM, FCN ...) for speech enhancement and various signal processing tasks.
- Developed ML models and tools for disease detection and assistive speaking system by collaborating with the doctors in the hospital.

Visiting Researcher — Toronto, Canada
Vector Institute, University of Toronto — *Sep. 2018 - Dec. 2018*
- Developed early pathological voice detection models by speech processing and DL techniques (MFCCs, Filter banks, LSTM).
- Built a robust system that can solve the channel mismatch problem between different devices, which increased the target domain PR-AUC from 0.84 to 0.94, through an unsupervised domain adaptation method, domain adversarial training [3].
- Proposed a transfer learning method to detect dementia in Mandarin by transferring feature domains from Mandarin to English [4].
- Achieved multi-language application by combining algorithms and models from different languages.

Data Scientist Intern — Taipei, Taiwan
Mobagel Inc. — *Jul. 2016 - Feb. 2017*
- Applied ML techniques and statistic models to extract core information from different types of IoT data.
- Predicted the office space occupancy rate with the detected data from real-time sensors.
- Deployed the machine learning models (Random forest, SVM, Logistic regression ...) to products.
- Utilized clustering and data visualization techniques to detect anomalous samples.

Skills and Language

Machine Learning/ Deep Learning: Pytorch, Tensorflow, Keras, Scikit-learn
Languages & Toolkit: Python, C/C++, MATLAB, Ruby, R, Docker, MongoDB, HTML, CSS, JavaScript, Php, SQL

Publications

[1] **Yi-Te Hsu**, Sarthak Garg, Yi-Hsiu Liao and Ilya Chatsviorkin,"Efficient Inference For Neural Machine Translation" *accepted to SustaiNLP workshop at EMNLP 2020*

[2] **Yi-Te Hsu**, Yu-Chen Lin, Szu-Wei Fu, Yu Tsao, and Tei-Wei Kuo,"A study on speech enhancement using exponent-only floating point quantized neural network (EOFP-QNN)" *accepted to IEEE Spoken Language Technology conference (SLT 2018)*

[3] **Yi-Te Hsu**, Zining Zhu, Chi-Te Wang, Shih-Hau Fang, Frank Rudzicz and Yu Tsao,"Robustness against the channel effect in pathological voice detection" *accepted to Machine Learning for Health Workshop at NIPS 2018*

[4] Bai Li, **Yi-Te Hsu** and Frank Rudzicz,"Detecting dementia in Mandarin Chinese using transfer learning from a parallel corpus" *accepted to Conference of the North American Chapter of the Association for Computational Linguistics (NAACL 2019)*

[5] Yu-Chen Lin, **Yi-Te Hsu**, Szu-Wei Fu, Yu Tsao, and Tei-Wei Kuo,"IA-NET: Acceleration and Compression of Speech Enhancement using Integer-adder Deep Neural Network" *accepted to INTERSPEECH 2019*

Leadership Experience

Director, NTUEE Chain: Built connection between alumni and undergraduate students in NTUEE.
Vice Director, Kinmen Alumni Association: Founder of the social service team to Kinmen.
Captain, Badminton Department Team: Won the championship in the annual competition among 6 cities.