

JUI CHU

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QUALIFICATIONS

- Self-motivated to **solve problems** with critical thinking and analytical skills
- Experienced in **object-oriented design** and OOP language **C++ and Python** for **data structure and algorithms** implementations
- Matured understanding of validation process to **ensure code quality and performance**
- Mastered **cross-functional communication** skills of realizing team functionalities and exchanging ideas with non-tech audiences
- Equipped with **fast-learning skills** for new technologies in agile and high-growth environment
- Sharpened software development skills by building personal website with **HTML, CSS, JavaScript and Node.js**
- Advanced knowledge of machine learning and hands-on experiences in **PyTorch** to apply it to software solutions

EDUCATION

Columbia University

M.S. in Computer Science

New York, NY

Jul 2020 - May 2022

National Taiwan University (NTU)

B.S. in Computer Science and Information Engineering (CSIE)

Taipei, Taiwan

Sep 2015 - Jun 2019

PROFESSIONAL EXPERIENCE

NTU Natural Language Processing Lab, Advisor: Prof. Hsin-Hsi Chen

Research Assistant

Taipei, Taiwan

Sep 2019 - Jan 2020

- Improved existing headline generation system using PyTorch to include precise numerics and favored media outlet's stances
- **Maximized data utility** by designing pre-training task for model to learn numeric processing before generation
- Refactored self-attention unit in Transformer model to embed stance information as query vector
- **Performed ablation test** to ensure solution quality of surpassing base model by 10% in precision of generated numbers
- **Organized human evaluation** to validate model performance by quantifying abstract metrics of stance semantics
- Contributed to community by sharing findings as a poster to WWW 2020 and a short paper to WI-IAT 2020

InQuartik (Cloud-based patent intelligence system, One-click solutions to patent analysis)

Software Engineer Intern

Taipei, Taiwan

Jul 2019 - Aug 2019

- **Formulated business decisions** of prior art detection as Named Entity Recognition task
- Introduced state-of-the-art neural networks model to replace rule-based approach for large-scale product system
- Performed data cleansing of 400K document by Python and MongoDB to filter OCR error and noisy data
- Solved OOV problem by building hierarchical neural model of CNN, LSTM, and CRF in PyTorch to inspect data in multi-granularity
- **Collaborated** with corporate legal department in patent review process with 92% detection rate by finalized model
- **Saved teams 10+ hours per week** from rule-based system maintenance

ACADEMIC PROJECTS

Recalled the Elderly by Complex Question Answering (QA) from Memoirs

Feb 2019 - Jun 2019

- Initiated complex QA to help elderly recall memories by linking personal experiences with real-world knowledge base (KB)
- **Saved \$20K** by data collection workflow of treating search engine as real-world KB instead of out-sourcing labeling
- Automated corpus construction of 500K QA pairs by scripting web scraper in Python
- Implemented joint training of Transformer models in PyTorch to compose questions from personal and general perspectives

Detected Fake News by Natural Language Inference

Sep 2018 - Jan 2019

- Performed feature engineering to capture fake news features, including TF-IDF and Euclidean distance of word embeddings
- Designed multi-channel for CNN model as RGB color model to include various dimensions of text features
- **Led team to win** outstanding term project honor for active brainstorm with teammates and 80% accurate inference rate

Informed ETF Price Prediction Model of Financial Text

Feb 2018 - Jun 2018

- **Customized loss function** of regression for sequence-to-sequence model by including price fluctuations in target function
- Expanded base model with market sentiment by relation extraction among quantitative facts in WSJ
- Competed in Price Prediction Competition (Trend Micro Inc.) against 500+ teams and ranked among top 100 for 82% accuracy

CAMPUS INVOLVEMENT

National Taiwan University

Receptionist, Admission Information Session of CSIE Department

Taipei, Taiwan

Feb 2017 - Jun 2017

- Facilitated procedures and activities of information session with CS department for 120 prospective students