Vincent Foster Chen

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Education

National Tsing Hua University *Sep 17 – Jun 21*
Bachelor of Science in Physics, Minor in Computer Science *Hsinchu, Taiwan*
Total GPA: 3.81/4.3, CS-related GPA: 4.06/4.3
Artificial Intelligence Program Certificate, Data Science Program Certificate

Research Experience

Natural Language Processing and Sentiment Analysis Lab, Academia Sinica *May 21 – Present*
Research Assistant of Dr. Lun-Wei Ku *Taipei, Taiwan*
NLP Applications and Researches

- Created a novel metric for visual storytelling, which obtains 30% higher accuracy for story-pair ranking than current existing automatic metrics for NLG (Publications [1])
- Analyzed user preferences in forward referencing as click-bait feature to create news headlines, which excels in fluency, faithfulness and attractiveness comparing to SOTA baseline models (Publications [2])
- Collected multi-image question dataset to evaluate performance for the visual question generation task

Acoustic Hearing Group, National Tsing Hua University *Feb 20 – Aug 21*
Undergraduate Research Assistant of Dr. Yi-Wen Liu *Hsinchu, Taiwan*
Chinese Online Class-ware Automatic English Subtitle System

- Utilized the Kaldi tool kit and training on Automatic Speech Recognition models using AISHELL corpus and performed adaptation on self-collected Taiwanese Chinese corpus (24 hours long)
- Implemented attention-based deep neural network architecture from scratch (Python based) to create a text machine translator (Chinese to English)
- Debugged pre-designed algorithms (Python based) of video subtitle generator, increasing accuracy and extending video recognition segments from minutes to hours

Publications Under Review

1. Learning to Rank Visual Stories From Human Ranking Data. Submitted to *the 60th Annual Meeting of the Association of Computational Linguistics (ACL '22)* (**1st** author)
2. Sate your Curiosity: Headline Generation via Faithful Forward Reference. Submitted to *the 60th Annual Meeting of the Association of Computational Linguistics (ACL '22)* (**2nd** author)
3. Associated Learning: an Alternative to End-to-End Backpropagation that Works on CNN, RNN, and Transformer. Submitted to *the 10th International Conference on Learning Representations (ICLR '22)* (**3rd** author)

Work Experience

Video Marketing intern *July 20 – Sep 20*
Essential Learning Group (ELG) *Shanghai, China*

- Produced podcast on speech therapies with speech pathologists and marketing teams
- Enhanced speech by filtering background noises and normalizing the vocal signal through Audacity software
- Advertised medical programs by creating video and animations

Projects

Fake News Topic Analysis *May 21 – June 21*

- Implemented Latent Dirichlet Allocation to detect latent topics and perform classification with machine learning algorithms
- Analyzed classification performance with word embeddings and SOTA language models (e.g., BERT)

Food Image to Text Recipe Generator *Nov 20 – Jan 21*

- Built a food Convolutional Neural Network classification model and utilized clustering algorithms to categorize food recipes. This system includes a self-designed UI with HTML

Self-Driving Car with Android App *May 19 – June 19*

- Assembled the automobile with Arduino, ultra-sensor module and a motor driver module to control embedding systems via Bluetooth 4.0

Bungee Jumping Simulator *Nov 18 – Jan 19*

- Programmed a bungee jumping simulator using MATLAB which animates the process and calculates the gravitational force and prevent the jumpers from hazards

Certification

Deep Learning Asia Silicon Valley

- Certificate of Completion Deep Learning for Industrial Big Data

Natural Language Processing Udemy

- Certificate of Completion Natural Language Processing with Python

Club Experience

Contemporary Music Club *March 19 – May 19*

- Instructed band performance, performed as keyboardist and vocalist at Rolling Bamboo Concert

High School Physics Summer Camp *July 18 – Aug 18*

- Led Physics Summer Camp, including teaching high school students physics concepts through self-designed games, participated as camp guitarist

Physics Department Student Association *Mar 18 – Apr 18*

- Performed as keyboardist and guitarist at the Night of Physics

No2. Basement Band *Oct 17 – Nov 17*

- Performed as keyboardist and vocalist at Grass Music Festival

Services

Peer Reviewer

- AAAI 2021, IAAI 2021

Volunteer Service

- Taipei Zoo, Genesis Social Welfare Foundation

Technical Skills

Programming Languages: C, C++, Python, R, MATLAB, Verilog, LABVIEW
Packages: PyTorch, Keras, Scikit-learn, NLTK, Tensorflow
Embedding Systems: Arduino, RaspberryPi
Media :Premiere, After Effects, Audacity

Other Skills

TOEFL: Total: 108 (Reading: 28, Listening: 30, Writing: 25, Speaking: 25)
GRE: Verbal :152, Quantitative: 170, AWA:3.5
Musical Instruments: Piano, Violin and Guitar
Sports: Basketball, Baseball and Golf