ETHAN HSU

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EDUCATION

Penn State University   *Class of 2021*
Master of Information Sciences and Technology
College of Information Sciences and Technology

Penn State University   *Class of 2019*
Bachelor of Science in Information Sciences and Technology
College of Information Sciences and Technology
Minor in Security and Risk Analysis Minor

RELEVANT COURSES

Machine Learning/Deep Learning/Research Methods

IST 557: Data Mining Techniques	IST 504: Foundations of Theory and Methods
IST 597: Foundations of Deep Learning	IST 402: Social Media Data Analytic
IST 497: Fraud Informatics	

PUBLICATIONS AND RESEARCH PROJECTS

Knowledge-Enriched Visual Storytelling   Published in AAAI 2020
Penn State University   *Co-Author*

- The goal of Visually storytelling is to generate a story from a sequence of images.
- Designed a three stages framework which integrates Transformer and Knowledge Graph.
- Implemented multiple knowledge graphs to enrich the story content, as well as modified Transformer positional encoding to generate telescopic stories.
- Wrote and revised the publication, as well as, modified the Transformer model by using Pytorch, and preprocessed, analyzed and visualized the data.

Navigating Ride-Sharing Regulations: How Regulations Changed the 'Gig' of Ride-Sharing for Drivers in Taiwan   Published in CHI 2019
Penn State University and Fu Jen University in Taiwan   *Co-Author*

- Successfully assisted to construct the interview questions, recruited and interviewed 19 participants in Mandarin Chinese.
- Presented three distinct phases of Taiwanese government regulations, the influence of regulations to the drivers, and the fundamental changes to the "gig" of ride-sharing.
- Recruited participants in Taipei, Taiwan, and transcribed interviews from audio to text.
- Iteratively coding for themes, analyze the data, and contributed to organizing the findings.

Ameliorating Farmer Suicides by Predicting Crop Price Trends using a Deep Learning Approach   Published in AI4EQ 2020
Penn State University

- Successfully designed the first deep learning model that incorporates spatial-temporal features to predict markets price trends in India.
- Constructed Wide Deep Temporal Convolutional Network (WideDeepTCN) which used Wide Deep Network to tackle the sparsity of the spatial data, and had TCN to learn the temporal relations.

· Organized the team, wrote the report, as well as, modified the WideDeepTCN/baseline models by using Pytorch, and preprocessed, analyzed and visualized the data.

EXPERIENCE

Academia Sinica – NLPSA (中研院, 台灣)   May 2019 - Present
NLP Research Assistant – Supervised by Dr. Lun-wei Ku

· Participated in an ongoing NLP Deep Learning project on Visual Storytelling, and published a paper to AAAI 2020.
· Researched and implemented in various deep learning language models and knowledge graphs.
· Acquired knowledge about programming a deep learning model by using Pytorch, as well as, operating and modified systems/environments on Linux.

Penn State University – Crowd-AI Lab   August 2019 - Present
Lab Member – Supervised by Professor Ting-Hao (Kenneth) Huang

· Participated in an ongoing NLP Deep Learning project on Visual Storytelling.
· Researched and implemented in various deep learning language models and knowledge graphs.
· Researched in Applications of NLP in pandemic.

Penn State University   August 2019 - December 2020
Instructional Assistant for IST 361: Application Development Design Studio

· Sole grader for application proposals, Unified Modeling Language(UML) designs, and Java Model-View-Control programming.
· Discussed rubrics with the professor as well as providing constructive criticism and detailed feedback for each of the assignments.

Interserv International Inc   May 2018 - August 2018
Game Development Internship

· Developed a candy-crush-like game using Unity/C#, Python and JSON.
· Researched and Developed a Deep Reinforcement Learning, specifically on Deep-Q-Network as the model to build a automated play-testing AI.

TECHNICAL STRENGTHS AND CERTIFICATIONS

Machine Learning Programming	Pytorch, Tensorflow, scikit-learn, NLTK
Machine Learning Techniques	Nature Language Processing, Language Models,
	Deep Supervised Learning, Deep Reinforcement Learning,
Computer Languages	Java, C#, Linux, Latex, JSON, HTML, CSS, SQL, PHP, Swift.
Other Technical Skills	Human Center Design, Human Center Interaction.