

ETHAN HSU

348 Blue Course Drive, Building 2, Number 156◇ State College, Pennsylvania, 16803
(+1) 814 954 2770 ◇ cxh5437@psu.edu

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.
- The generated stories are more coherent and informative than leading team in Visual Storytelling Competition, and achieved better performance in human evaluation.
- Assisted on developing a website in Amazon Mechanical Turk for evaluations on story quality.
- 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.
- Participated a joint project between User Agency Lab from Penn State University, Fu Jen University.
- 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, Institute of Information Science (中研院, 台灣)
NLP Research Assistant

May 2019 - Present

- Participated in an ongoing NLP Deep Learning project on Visual Storytelling, and published a paper to AAAI 2020.
- Researched and Developed different deep learning language models, knowledge graphs, and positional encoding algorithms.
- Collaborated with Academia Sinica's Natural Language Processing and Sentiment Analysis Lab and Penn State University's Crowd-AI Lab.
- Acquired knowledge about programming a deep learning model by using Pytorch, as well as, operating and modified systems/environments on Linux.

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
Game Development Internship

May 2018 - August 2018

- 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
Machine Learning Techniques

Python: Pytorch, Tensorflow, scikit-learn, NLTK, Numpy
 Nature Language Processing, Language Models,
 Deep Supervised Learning, Deep Reinforcement Learning,
 Data Preprocessing, Linear Algebra.

Computer Languages
Other Technical Skills
Certificates

Java, C#, Linux, Latex, JSON, HTML, CSS, SQL, PHP, Swift.
 Network Protocol, Internet Security
 Human Subjects Research (IRB),
 National Security Agency - IST (UCT) Certificate,