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

RELEVANT COURSES

Machine Learning/Deep Learning/Research Methods

IST 597: Natural Language Processing	IST 504: Foundations of Theory and Methods
IST 597: Machine Learning in Healthcare	IST 597: Element of Machine Learning
IST 557/558: Data Mining Techniques I + II	IST 504: Element of Privacy

PUBLICATIONS AND WORKSHOP PAPERS

Plot and Rework: Modeling Storylines for Visual Storytelling
First-Author, Published in ACL-IJCNLP 2021 Findings [Paper]

· Propose a framework to plot a story graph and rework the visual stories, using a relation extractor, multiple knowledge graphs, a Transformer Language Model, and a human-like discriminator.

Stretch-VST: Getting Flexible With Visual Stories
First-Author, Published in ACL-IJCNLP 2021 Demo [Video] [Demo]

· Proposed a framework that can generate visual stories with 5 - 9 sentences, using a knowledge graph and a Length-Controlled Transformer, as well as, designed a website to demonstrate the ability to prolong stories.

Using Tweets to Assess Mental Well-being of Essential Workers During the COVID-19 Pandemic
Co-Author, Published in CHI LBW 2021 [Paper]

· Collected and conducted temporal behavioral/sentiment analyses on essential workers' tweets to assess their mental well-being.

Let's Talk! Striking Up Conversations via Conversational Visual Question Generation
Co-Author, Published in AAAI 2021 Workshop: Deep-Dial 2021 [Paper]

· Designed a framework to strike up a conversation via generating a question from images using an existing visual storytelling model and a T-5 model.

Knowledge-Enriched Visual Storytelling
Co-Author, Published in AAAI 2020 [Paper]

· Designed a framework which integrates a Transformer Language Model and multiple knowledge graphs to generate enriched visual stories from images.

Navigating Ride-Sharing Regulations: How Regulations Changed the 'Gig' of Ride-Sharing for Drivers in Taiwan
Co-Author, Published in CHI 2019 [Paper]

· 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.

Ameliorating Farmer Suicides by Predicting Crop Price Trends using a Deep Learning Approach
Co-Author, Published in ECAI Workshop: AI4EQ 2020 [Paper]

· Designed a Wide Deep Temporal Convolutional Network (WideDeepTCN) that incorporates spatial-temporal features to predict markets price trends in India.

EXPERIENCE

Academia Sinica – NLPSA (中研院, 台灣)   May 2019 - June 2021
NLP Research Assistant – Supervised by Dr. Lun-wei Ku

· Researched in natural language generation and evaluation in Visual Storytelling.

Penn State University – Crowd-AI Lab   August 2019 - June 2021
Lab Member – Supervised by Professor Ting-Hao (Kenneth) Huang

· Researched in natural language generation and evaluation in Visual Storytelling.
· Researched in Applications of NLP in pandemic and disaster related topics.

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.

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 (Deep-Q-Network) to build an automated play-testing AI.

TECHNICAL STRENGTHS AND CERTIFICATIONS

Machine Learning Programming	Pytorch, Tensorflow, Scikit-learn
Machine Learning Techniques	Nature Language Processing, Vision-to-Language,
	Knowledge Graph and Relation Extraction, Time Series Prediction
Computer Languages	Python, Java, C#, Linux, Latex, HTML, CSS.
Other Technical Skills	Human Center Design, Human Center Interaction.