Ting-Wei Lu

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Autobiography

Introduction

I was born in Kaohsiung, in a family of four. My parents are senior high teachers, and my two-year older sister is now a student at NTU studying biology. I graduated from Kaohsiung Senior High School, and have played for their varsity baseball team for 3 years in high school. During my time as a player, we have set numerous records that had yet to be beaten. After graduation, I came to NTU studying Engineering Science and Ocean Engineering. My years in campus was great, but I'm not that interested in my own major. So in my sophomore year, I decided to focus on the study of computer science, deep learning to be exactly.

Who I am in life

I am a very competitive person, most of my achievements in both academic and sports are driven by the thought of "I'm better than you". That is why I, a non-computer-science-major student, decided to join the undergraduate research program and to work as an intern in my junior year. However, wanting to standout doesn't make me a cruel person, I enjoy working as a team way more than solitary, which can be revealed by my experience in varsity baseball team. For me, senses of belonging outweigh my ego by far. Also, I am a very humorous person. In fact, if I were to choose a career outside of technology, I would be a comedian or a sitcom writer.

Why ML for NLP?

First semester in my senior year, based on my peers' recommendation, I took the entrance coding examination of the machine learning course of our school. Fortunately, I was able to rank top 50 out of the 500 students who took the exam and thus successfully signed up for the course. In the course, the ability to use models for prediction and generation quickly caught my eye, but still hesitate on making it my research major. As time goes by, I noticed the field of natural language processing, which can somewhat combine by interest in machine learning and literature(comedy), it became a obvious choice for me the step in this field.

My outlook on the future.

While most of my peers who wanted to switch major decided to waited for graduate school for them to change path, I refuse to procrastinate on it. That is why I join two undergraduate research project simultaneously in my junior year to make myself more competitive. After graduation, I plan to get a Masters degree or a PhD degree, depending on my undergraduate research results.

Education

National Taiwan University   **Graduation Expected in June 2020**
- Bachelor of Science in Engineering Science and Ocean Engineering

Kaohsiung Senior High School   **2012/09 - 2016/06**

Research

Research Interest: Deep learning, Natural Language Processing

Undergraduate Research Programs:

- **NTU Machine Intelligence and Understanding Laboratory**   **Ongoing**
  Advisor: Prof. Yun-Nung (Vivian) Chen
  Topic: Character Embedding

- **NTU Natural Language Processing Laboratory**   **Ongoing**
  Advisor: Prof. Hsin-Hsi Chen
  Topic: Complex Questions Answering

Skills

Deep learning framework: PyTorch, Keras

Programming language: Python, Java, C++, Matlab

Web development: HTML5, CSS3, JavaScript, jQuery, Node.js, PHP, MySQL

Projects

- **Machine Learning Projects**
  - **Dialogue Modeling**
    Build retrieval-based bot with LSTM attention model.
    (Technique) LSTM, Attention, Word-Embedding.
  - **Malicious Comments Identification**
    Differentiate malicious comments from normal ones on Dcard.
    (Technique) LSTM, Word-Embedding, Bag of Words.
  - **Image Sentiment Classification**
    Classify images of different sentiments with some of them has drastically less training data.
    (Technique) CNN, VAE
  - **Credit Card Default Payment Prediction**
    Predict the credit card default payment using various information.
    (Technique) Logistic Regression, Generative Model.
  - **PM2.5 Prediction**
    To predict the PM2.5 concentration of the next hour using data of the nine previous hours.
    (Technique) Linear Regression.

- **Human Protein Atlas Image Classification**
  Develop models capable of classifying mixed patterns of proteins in microscope images.
  (Technique) CNN, Transfer Learning, Focal Loss.

- **Reservation System Design**
  Build a mock reservation system for Taiwan High Speed Rail, including all the necessary functionality like booking, train searching, server-client communication, …etc.
  (Technique) Server and Client application: Java; Command Design Pattern; MySQL database.

Competitions

- **NTU System App Creativity Contest**   **Honorable Mention**
  Build a web application with that serves as a shopping website which can accomplish all the common features like search engine, user account system and payment system.
  (Technique) Frontend: HTML5, CSS3, JavaScript, jQuery; Backend: PHP with MySQL database.

Experience

- **KSHS Baseball Team / NTU Baseball team**
  Member of the varsity baseball team in senior high school and college.

- **Math Tutor**
  1 year experience in math tutoring for junior high and high school students.