Yi-Li Chen (Leo)

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EDUCATION

University of Southern California (USC), Los Angeles, CA — Aug. 2019 – Present
Master in Industrial and Systems Engineering (Analytics)

National Central University (NCU), Taoyuan, Taiwan
Master in Mechanical Engineering | GPA: 4.0/4.0 — Sep. 2017 – Nov. 2018

PROJECTS/ PUBLICATIONS

- **Intelligent sensor for EDM(C++)** — Sep. 2017 – Oct. 2018
  - Developed a capacitive sensing system to measure the concentration of particles in dielectric fluid
  - The accuracy of average capacitance variance can be 0.55pF for per $1cm^3$/100ml particles
- **A linked knowledge base of crime data (Python, T2WML, SQL)** — Fall. 2019
  - Analyzed the crime dataset of LA to visualize integrated results to solve different specific problems
  - Cleaned and visualized over 2 million entries of the data by using pandas/matplotlib libraries in Python
  - Used ISI's T2WML to extend Wikidata and create a linked Knowledge Base for Crime Data
- **Costa Rican Household Poverty Level Prediction (Python)** — Fall 2019
  - Predicted the poverty level by EDA, feature construction/selection, modeling and model tuning orderly
  - Organized and visualized the data by using pandas/matplotlib/seaborn libraries in Python
- **Recipe recommendation system (Python, Web scraping)** — Spring 2020
  - Built a recipe recommendation system that can help users to customize the meal by desired preference
  - Scraped thousands of recipes and reviews from the website with Selenium and BS4.
  - Modeled an optimization problem for meal planning system with Pyomo library after collaborative filtering
  - Recommend an optimized weekly meal plan with 90% level of satisfaction
- **COVID-19 Data Analysis and Prediction (Python, AnyLogic)** — Spring 2020
  - Analyzed and visualized the real-world data with SIRF model in Python
  - Predicted the epidemic situation in CA a week and for long term with a stable error
  - Utilized AnyLogic software to simulate the epidemic and Herd Immunity with SEIRD model
- **NLP-based recommender system for standup comedians (Python, Neo4j)** — Fall 2020
  - Applied LDA topic modeling for content-based filtering and GMM with FastMap for clustering
  - Sentiment analysis and matrix completion are used on the scraped comments from YouTube to build matrix
  - Incorporated the analysis result of transcripts and comments into Knowledge Graph with Neo4j
  - Accuracy is about 70%, higher than the classic collaborative filtering by some 6%
- **Airbnb data mining (R)** — Fall 2020
  - Take the crime data into consideration and recommend the housing location for leasing
  - Analyzed, visualized and modeled the data by using tidyverse/ggplot/ggmap/rpart libraries in R
  - The accuracy of predicting the price of Airbnb clustering is greater than 85%

WORK EXPERIENCE

Academia Sinica (Machine Learning) — **Taipei, Taiwan**
Research Assistant — Apr. 2019 – Jul. 2019

- Machine learning in wireless communications
- Provided quantitative, visual explanations and critical features for the DNN learning process
- Utilized dimensionality reduction visualization to project the high-dimensional feature space to the 2D space

LEADERSHIP & EXTRACURRICULUM

Capstone Project Case Competition — Taipei, Taiwan/ Higashi-Hiroshima Japan
Representative — Sept. 2016 – Jul. 2017

- On behalf of the department to make a presentation at Hiroshima University in Japan

The Student Association of NCU — Taipei, Taiwan
Minister of Campus Activities Department — Sept. 2013 – Jun. 2015

- Carried out three campus exhibitions, each with thousands of participants; coordinated with 80 other club presidents and oversaw club showcases during the exhibitions

PROFESSIONAL SKILLS

Computer Skills: LabVIEW, AMPL, Arena, AnyLogic, PostgreSQL, Git, React, Node.js
Programming languages: C#, C++, Python, R, MATLAB, Latex, SQL, JavaScript, HTML, CSS