Tzu-Chun Hsieh

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A highly experienced data scientist in statistical models, machine learning, and deep learning. Full-stack programmer in Python, C and C++. A professional in online advertising and business analytics in various industries.

EDUCATION

Duke University, Durham, NC **Aug 2019-May 2021**
Master in Interdisciplinary Data Science *GPA: 3.8/4.0*
- Coursework: Machine Learning, Data Management Systems, Cloud Computing, Computer Vision

National Taiwan University (NTU), Taipei, Taiwan **Jun 2014**
Bachelor of Arts in Economics (ranked top 10% in class) *GPA: 3.95/4.30*

WORK EXPERIENCE

Rhodes Information Initiative, Duke University, Durham, NC **Jun-July 2020**
Data Scientist Intern
- Implemented dimension reduction (PCA, t-SNE, factor analysis), and unsupervised learning (K-means, autoencoder) to analyze the similarity in children's taste using food preference survey data.
- Built and visualized an interactive food recommendation system that gives suggestions to parents of children who have ARFID, an eating disorder characterized by highly selective eating habits, the best food to try next to extend the variety of food children accept.

CyberAgent, Inc. Taiwan Branch, Taipei, Taiwan **Oct 2016—Jun 2018**
Project Manager (Department of Advertising)
- Led a team of 5 to develop and execute digital marketing strategies including market analysis, advertising media planning, creative ideas, advertisement budget control, and future prospect.
- Optimized ads performance of Google Ads, Bing Ads, Yahoo Gemini by analyzing ad performance data and A/B Testing biding, target audience, creative ideas, landing pages, etc.
- Raised the profit of online ad campaigns by up to 50% and improved sales by up to 100% for 10+ companies in various industries.
- Awarded by Oath Inc. with YAHOO Monthly Best Native Ads in August 2017.

PROJECTS

Classification of Urban Sounds **April 2020**
- Implemented Mel-Frequency Cepstral Coefficients (MFCC) to extract features from the urban sounds data and applied SVC, Multi-Layer Perceptron (MLP), and CNN to classify sounds.
- Achieved 90% accuracy for all three classification models: SVC, MLP, and CNN.

Identify solar panels from satellite images **March 2020**
- Implemented histogram of oriented gradients (HOG) to detect edges on satellite images and applied Support Vector Machine (SVM) and Convolutional Neural Network (CNN) to categorize data.
- Achieved 97% accuracy and F-1 score:0.92 with the CNN model.

Estrogen Bioassay **Nov 2019**
- Defined new variables to solve colinearity and correlation issues between predict variables.
- Implemented a hierarchical model to measure the effect of estrogen agonistic, a hormone that controls sex characteristics, on the uterus weight of rats, controlling the type of rat used.

SKILLS & CERTIFICATIONS

Programming: Python (Pandas, Pytorch, Scikit-learn), R, C, C++, SQL, JavaScript, HTML, CSS
Technical skill: Statistical Models, Machine Learning, Deep Learning, Reinforcement Learning, NLP, A/B Testing, Data Structure, Algorithm,
Tools and Framework: AWS, GCP, Spark, Hadoop, Docker, HPC cluster system, Tableau
Languages: Mandarin (native); English (fluent); Japanese (fluent)