# Ming-Ruey(Ray) Chou

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## SKILLLS

**Programming** Python: Linux - IDE & Virtualenv/Docker, Windows - Anaconda, Java, IDL, Labview

**Machine Learning** TensorFlow, Keras, Scikit-Learn, Pandas, Lightgbm

**Visualization** Matplolib, Seaborn; OriginLab

**Database** SQL & MySQL

**Language** Mandarin: Native; English: Fluent

## PROJECTS

**Top 16%**
**Image Classification**

### Kaggle - iMaterialist Challenge(Fashion) at FGVC5

● Wrote multi-thread to speed up processing over one million images ● Transfer learning for standard CNNs with Keras
● Apllied GrabCut and spectral saliency detection to segment background/foreground for preprocessing

**Top 27%**
**Demand Predicting**

### Kaggle - Avito Demand Prediction Challenge

● Data preprocessing with Pandas over one million data ● Utilized LightGBM as fully GPU-based GBDT model
● Tackled the task with iterative process of EDA, using observation from EDA to improve the model

**Top 19%**
**Object Detection**

### Kaggle - Google AI Open Images - Object Detection Track

● Handled the currently largest dataset – Open Images Dataset V4 ● Packed data into highly efficient TFRecord format
● Employed TensorFlow object detection API to do transfer learning on Faster-RCNN architecture.

**Top 21%**
**Pneumonia Detection**

### Kaggle - RSNA Pneumonia Detection Challenge

● Built Unet and Faster-RCNN from scratch with TensorFlow ● Automated trainning with TensorFlow Estimator API
● Applied data augmentation including half-splitting, rotating, and flipping.

**Time Series Prediction**

### T-Brain AI- Taiwan ETF Price Prediction

● Modeled ETF prices with ARIMA ● Experiemted random forest classifier with traditional technical indicators like RSI, stochastic oscillator, %R, Chaikin oscillator, CCI .etc as features

## EDUCATION

2016 **M.S. in Physics**, *Department of Physics*, National Taiwan University.

2013 **B.S. in Physics**, *Department of Physics*, National Taiwan University.

**Course Work – Coursera :**.

○ Algorithms 4E, Robert Sedgewick and Kevin Wayne; Princeton
○ Machine Learning Foundations, Hsuan-Tien Lin; NTU
○ Machine Learning, Andrew Ng; Standford
○ Introduction to SQL, Charles Severance; Michigan
○ SQL for Data Science, Sadie St. Lawrence; UC Davis

## WRITING

**M.S. Thesis** **Rheometry on Concentrated Suspension of Soft Particles**
(In Mandarin) *www.phys.sinica.edu.tw/jctsai/Ray2016/*

## OTHER EXPERIENCE

JAN, 18 ; JUL, 18 **Twin Oaks Education**, *Course Design and Project Mentor*, www.twinoaks-edu.com/.

2017 **Substitue Services in Education**, *Xinyi Elementary School*, Hualien, Taiwan.