

# Ming-Ruey(Ray) Chou

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## SKILLS

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

**ML** TensorFlow, Keras, Scikit-Learn, Pandas, Lightgbm

**Visualization** Matplotlib, Seaborn; OriginLab

**DB** SQL & MySQL

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

## PROJECTS

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

Top 16% Multi-label classification competition over one million images. I did transfer learning for standard CNNs with Keras, and use GrabCut and spectral saliency detection to segment background/foreground for preprocessing.

### Kaggle - Avito Demand Prediction Challenge

Top 27% Predict the demand over one million products on Avito.ru website. After standard missing value handling, one-hot encoding, and data normalization, I tackled the task with iterative process of EDA and GBDT modeling with LightGBM. Using both feature importance given by the model and observation from EDA to improve the model.

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

Top 19% An object detection competition on Open Images Dataset V4. I packed the data into TFRecord format and used TensorFlow object detection API to do transfer learning on Faster-RCNN architecture.

### Kaggle - RSNA Pneumonia Detection Challenge

Top 21% Predict the location of Pneumonia on X-ray images. Using TensorFlow, I built Unet and Faster-RCNN from scratch, trained models with Estimator API and applied data augmentation including half-splitting, rotating, and flipping.

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

Use ARIMA to predict the time series of ETF prices. Also experient with traditional technical indicators like RSI, stochastic oscillator, %R, Chaikin oscillator, CCI .etc as features for a random forest classifier.

## EDUCATION

SEP, 13 - JUL, 16 **M.S. in Physics**, Department of Physics, National Taiwan University.

SEP, 09 - JUL, 16 **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/](http://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/](http://www.twinoaks-edu.com/).

SEP, 16 - AUG, 17 **Substitutue Services in Education**, Xinyi Elementary School, Hualien, Taiwan.