HAN TANG

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Stamp 1G

EDUCATION TRAINING

Technological University of Dublin, Dublin, Ireland *September 2018 - Febraury 2020*
MSc. in Computing (Data Analytics)
School of Computing

Award: 2.1

Relevant Subjects:
Working With Data (A): Programming in SQL and R.
Machine Learning (A^-), Deep Learning (A): Machine Learning in Python.
Data Mining (B^+): The full life cycle of Data Mining project deployment.
Dissertation:
A Comparison Study on State-of-the-art Minority Class Data Oversampling Techniques for Imbalanced Learning

Dublin Institute of Technology, Kevin St., Dublin, Ireland *September 2017 - June 2018*
Pre-master for MSc in computing. *Average score: 78*

Beijing University of Chemical Technology, Beijing, China *September 2013 - June 2017*
BSc. in Applied Chemistry

Relevant Subjects:
Inorganic Chemistry, Organic Chemistry, Computational Chemistry, Analytical Chemistry, Physical Chemistry.

Dissertation:
Study the factors of the layer heights of Layered Double Hydroxides.

PROJECTS

Dissertation: A Comparison Study on State-of-the-art Minority Class Data Oversampling Techniques for Imbalanced Learning

Github Link: MSc. Dissertation Han Tang

Study the state-of-the-art approaches to imbalanced learning. The focus of study is on Synthetic Minority Oversampling Technique (SMOTE) and its extensions.

Compare more than ten data resampling methods' performances on 35 datasets, and check whether their differences are in a statistic level.

Dissertation for Bachelor in Applied Chemistry: Theoretical Study on the Factors Influencing the Interlayer Distance of Layered Double Hydroxide

Github Link: BSc. Dissertation Han Tang

Apply molecular dynamics simulation based on a self-build force field as a mean to research Layered Double Hydroxide (LDH).

Simulations are on the NiAl-LDHs materials of different anions, and the ratios of Ni: Al.

Conduct dynamic simulation on the compounds, analyse and study how each factor affects the interlayer distance of LDHs.

Multi-label Bird Species Classification - NIPS 2013 Kaggle Competition

Github Link: NIPS 2013 bird song classification

Produce Deep Learning Neural Networks to identify the bird species from their records, trained from a dataset contains 1000 instances and 87 classes.

Plot the Mel-frequency spectrograms of the soundtracks, then to train convolutional neural networks from the spectrogram graphs.

The architecture is from the ConvNet in the package Fastai. The result of AUC is 0.83.

WRITINGS

Effective feature engineering techniques on data set contains sequential feature

Github Link: Ford Challenge

The data set retrieved from Kaggle competition - 'Stay Alert! The Ford Challenge' records the change of drivers' behaviours over time.

Rolling means and standard deviations of each feature are introduced as new features to record the sequential change.

This feature engineering technique improves the performances of models of several machine learning algorithms, proved to be useful.

CAREER EXPERIENCE

State Key Laboratory of Chemical Resource Engineering November 2015 - May 2017
Researcher

- Research on methods of calculating/estimating chemical parameters of complex compounds.
- Calculate chemical parameters of compounds automatically in Python.

LANGUAGES & SKILLS

Technical Skills	SQL, MS Excel, R Python(4 years), Machine Learning Deep Learning, Data Mining LaTex, Tableau, SAS, Matlab Keras, Pandas, Numpy Scikit-learn, TensorFlow Web Scraping
Soft Skills	Analytical Skills, Productivity Problem Solving, Teamwork Presentation Skills, Integrity Critical Thinking, Creativity
Languages	English (Full professional proficiency), Mandarin (Native proficiency)

INTERESTS

Associations:	Member of UK Oracle User Group Github Page: http://github.com/HirahTang.
Other activities:	Play in a weekend football amateur league. Enthusiastic in mathematics and general science.