

Ziying Feng

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Education

University of California, Los Angeles (UCLA)

Expected Dec 2019

PhD in Chemistry GPA: 3.8/4.0

Awards: University Fellowship, Graduate Division Fellowship, Research Assistantship, Teaching Assistantship

Sun Yat-Sen University (SYSU), China

Jun 2014

BS in Optical Informatics GPA: 3.9/4.0

Skills

Programming Language:	Python,	Matlab,	R	
Data Analysis:	TensorFlow Keras,	Apache Hadoop,	Machine Learning,	MySQL
Web Development:	Django,	JavaScript,	HTML / CSS,	Objective-C

Software Engineering Projects

Deep Learning for Classification of Movement Information from EEG images (Python, TensorFlow)

- Applied STFT (Short Time Fourier Transform) on the time series EEG (Electroencephalography) data (2115 trials, 25 electrodes, 1000 time bins) to extract the frequency feature, used cropping technique for data augmentation
- Developed the CRNN model in TensorFlow Keras using the CNN (Convolutional Neural Network) to capture the spatial feature and the RNN (Recurrent Neural Network) to capture the temporal feature
- By tuning the hyperparameters of the model using grid search cross validation from Scikit-Learn achieved the accuracy up to 74% for each patient and the accuracy of 56% for all patients

N-Gram and Language Model Implementation with MapReduce for Auto-Completion Function (Hadoop)

- Input data from 3 books about 370,000 words, built the N-gram library and the language model with MapReduce
- Tokenized the input data to build N-gram library. Split the n-gram tokens into input phrases and forecast words. Picked the top K forecast words with TreeMap data structure.
- Output data to MySQL database, followed by using MAMP software for auto-completion function visualization

PageRank Implementation (R, Hadoop)

- Simulated PageRank by performing random walk using R in a preferential attachment network with 1000 nodes
- Implemented PageRank with MapReduce on 6000 nodes. Mapper: split the transition matrix and the initial PageRank matrix into cells; Reducer: performed multiplication of the cells and sum up to be PageRank score for each page

Web Development (Django, HTML / CSS)

- Developed a web application to realize posting photos, updating comments, authentication, authorization
- Used Ajax and CSS to for the like function, updating data from to database without redirecting pages
- Git committed codes to Heroku for web deployment

IOS Application Development (Objective-C)

- Built an IOS application using UITextField, UISegementControl, SLComposeViewController, UIAlertController
- Realized the function of unit conversion, posting on social network and popping out message

Related Work Experience

Verily Life Sciences (formerly Google Life Sciences), Hardware Engineer Intern

Jun 2018 – Sep 2018

- Fabricated implantable device prototypes in the cleanroom with polymer based process
- Automated oscilloscope data collection for prototype testing with Python

UCLA Graduate Researcher

2014 - 2019

- Combined Gerchberg-Saxton phase retrieval algorithm and Genetic algorithm for waveform retrieval
- Performed finite element analysis (FEA) for the reflectance periodic nano structure
- Published 2 first-authored paper and 6 co-authored paper