ZIJIANG YANG

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EDUCATION

Northwestern University – Evanston, IL Sep. 2014- present

MS, Mechanical Engineering, GPA: 3.89/4.00

Shanghai Jiao Tong University (SJTU) - Shanghai, China Sep. 2010- Jun. 2014

BS, Mechanical Engineering, major GPA: 3.88/4.00 (Rank **2/90**)

TECHNICAL SKILLS

- Java; Python; SQL; R; XML; XSLT; Matlab; Fortran
- PyCharm; Eclipse; Emacs; MySQL; SQLite; RStudio; Visual Studio; Matlab

TECHNICAL EXPERIENCE

Data Mining for Material Genome Initiative Dec. 2014-present

- Parameterized the dielectric spectroscopy obtained from FEA simulation
- Characterized microscopic images using correlation based and descriptor based algorithms
- Established a 95% accuracy predictive model of dielectric property by applying data mining algorithms on sets of descriptors.

Sentiment Analysis on Movie Reviews Apr. 2015-Jun. 2015

- Coded algorithm and built a database that learn the frequency of features, such as unigrams, bigrams and stems, used in classification of movies
- Established a 90% accuracy classification model by implementing a Naïve Bayes Classifier that analyzes the sentiment conveyed in text with Python

Sketch Recognition (distinguish text from graphics strokes in handwriting digital ink) Apr.2015-Jun. 2015

- Coded algorithm for learning conditional probability distribution of features such as stroke's length, drawing speed and curvature of a stroke with Python
- Achieved 88% prediction accuracy sketch recognition model by implementing Hidden Markov Models

Prediction model of building energy performance using statistical machine learning tools Apr. 2015-Jun. 2015

- Developed statistical machine learning framework and used R to train linear regression model and nonlinear regression model (Neural Network) to study the effect of eight input variables on two output variables
- Operated variable selection and model comparison, identified the most strong related input variables and achieved 92% prediction accuracy of building energy performance

Web-based interactive responsive module for physics modeling of composite material property Jul.2015-present

- Implement Java API for COMSOL to code a finite element simulation of dielectric permittivity spectroscopy with explicit microstructure dispersion model
- Built an online application with HTML (http://puma.mech.northwestern.edu:8000/FEA2D/)

Sound application – BeatBox Drum Machine Jun. 2015 – Jul. 2015

- Built a multi-player sound application with Java which achieves functions such as make patterns, manipulate patterns, share patterns with other players, etc.

EMPLOYMENT EXPERIENCE

Grader **Northwestern University** Winter 2015 & Fall 2015

- Held office hour, graded assignments, exams, reports for courses Heat Transfer (ME 377) and Computer Integrated Manufacturing I: Manufacturing Processes (ME 340-1)

Mechanical Engineer **DunAn Holding Group** Jul. 2013- Oct. 2013

- Investigated the characteristics of R410A two-phase flow in two-phase ejector and constructed the model with Matlab; built test-bench and collected experimental data such as system COP, refrigerating capacity, etc.
- Improved system performance by 9.37% and submitted paper to *International Journal of Refrigeration*