HAO ZHANG

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INTERNSHIP:

Software Developer Intern for Siemens Inc. (Princeton, NJ)   June 2017 – Aug. 2017
Developed a translator which handles over 100 grammars (**ANTLR 4, Python**)
Analyzed constrained-optimization models with over 20 non-trivial constraints (**MiniZinc**)
Created interactive webpages (**Angular 4, D3, Crossfilter**)

Software Developer Intern for Glottal Enterprises (Syracuse, NY) May 2016 – June 2017
Designed and updated 4 medical applications (Each has over 10,000 lines of **C#** code)
Created webpages for company website glottal.com in **HTML, CSS, JavaScript, and PHP**
Composed instructional documents and filmed tutorial videos for over 20 customers

PROJECTS:

Self-motivated Commercial Data Analysis Projects   May 2015 – Jan. 2017
Built **Hadoop** environment to perform sentiment analysis on 8,000 tweets in **Pig Latin**
Set up **Deep Neural Networks** with 70,000 records to detect dissatisfied customers in early stage and achieved 96% accuracy
Create **Python** Algorithm to assess taxi/bus service (2.5 Gb of taxi and bus data each)

Speech De-reverberation System for Speaker Verification   Sep. 2015 – Present
Won $100,000 research grand
Designed multi-task **CNN** and **LSTM RNN** to "clean" reverberant speech
Implemented state-of-the-art **feature extraction** algorithm with **parallel computing**
Evaluated the system with I-vector **Speaker Verification** algorithm

Stock Market Prediction using Machine Pattern Recognition   Jan. 2014 - May 2014
Computed over ten indicators from raw stock market data
Applied Principal Component Analysis and Linear Discriminant Analysis to extract features
Implemented **Neural Networks** algorithms and **Hidden Markov Models** for prediction
Designed buy/sell strategy to earn 200% profit over 20 years

Building "China Daily" Mandarin Corpus   Dec. 2013 – Jan. 2014
Formatted 2 months of parsed "China Daily" newspaper text (over Two Million Words) into speech corpus for building **language models**
Created a **MATLAB** program for pre-processing and then put each sentence in a separate file
Created **batch files** to batch edit and change file type

PUBLICATION: [Evaluation of Respiratory Masks for Speech Measurement](#)   **May 2015**
Presented at 169th Acoustical Society of America Meeting
Compared the performance of two commercial pneumotachograph Masks
Obtained the masks' transfer functions by 1/3 octave band analysis
Measured formant shift caused by masks using **MATLAB** and **Praat**

TEACHING
EXPERIENCE:

Binghamton University, State University of New York   Sep. 2013 – May 2016
Teaching Assistant
Supervised over 200 students in Junior Design Lab over three semesters
Provided assistance to 50-100 students with course related difficulties during office hours

EDUCATION:

Binghamton University, State University of New York
PhD in Electrical and Computer Engineering (will graduate May 2018)
B.S. in Electrical and Computer Engineering (graduated May 2013)

SKILLS:

C#, C++, C, Visual Studio	**Python, Java, Hadoop, Pig Latin**
HTML, CSS, JavaScript, PHP	**Simulink, MATLAB, Digital Signal Processing**
Kaldi, HTK, Linux Bash Script	**Fundraising, Customer Service**