RONG JIN

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OBJECTIVE

Seeking a machine learning/data scientist position. With 6 years of professional training in computer science and machine learning, and keen to apply and transform knowledge and skills into products and applications.

EDUCATION

Indiana University (Bloomington, IN) 2010 - current
- Ph.D. candidates in School of Informatics and Computing

Tsinghua University (Beijing, China) 2006 - 2010
- B.S. in School of Information Science, Automation Department

PROFESSIONAL EXPERIENCE

Research Associate **(Music Informatics)** 2010 – 2016
Indiana University, IN
- Developing Ceres, an Optical Music Recognition (OMR) system, to convert scanned images of music scores to symbolic music representation (**C/Objective C**).
- Understanding and interpretation rhythms on polyphonic music scores through graphic models with global optimization using dynamic programming.
- Training probabilistic models on music symbols to adapt to a specific music font.
- Developing an interactive system to improve recognition with human-in-the-loop recognition algorithm.

Associate Instructor 2010 - 2016
Indiana University, IN
- Taught data science on performance analysis, focusing on machine learning with sklearn, statistics analysis with pandas and data visualization with matplotlib.
- Taught system architecture of distributed applications on web parsing, MySQL, interactive web application programming with CGI script.
- Taught introductory python programming class, focusing on basic syntax and semantics, object oriented programming and GUI programming.

Data Analyst intern 2013 summer
Megaputer Intelligence Inc., IN
- Applied text sentiment analysis on marketing surveys for cleaning product companies to predict product sales and ratings.
- Applied anomaly detection on cashier data for fast-food companies to identify employee theft behavior.
- Defined metrics on payroll data for temporary job agencies to identify fraud companies.

RESEARCH PROJECTS

- Optical Music Recognition with deep learning (Caffe) using HMM-RNN model.
- Face Recognition with part-based graphic model. Built and trained Markov networks on human face datasets and inferred with belief propagation.
- Music Recommendation system. Predicted users' preference on music with collaborative filtering algorithm on a music rating dataset.
- Sentiment Analysis on online comments. Applied part-of-speech tagging to choose indicative features on comments and predicted ratings with multi-class support vector machine classifier.
- Piano expressive performance. Estimated tempo and dynamic on human played data. Trained a model of tempo on pitch, musical onset and duration with multi-variant regression.
- Music audio transcription. Built music spectrogram with short-time Fourier transforms. Estimated pitches with hidden Markov model.

SKILLS

- Professional training in machine learning, computer vision, statistics.
- Extensive experience in probabilistic graphic models, deep learning, NLP, audio processing.
- Extensive hands-on programming experience in C, C++, Objective-C, Python.
- Proficient skills in R, Matlab, Bash, Java, MySOL, Javascript.
- Extensive experience on deep learning packages including Caffe, TensorFlow
- Professional training in modules and packages including NumPy, SciPy, Matplotlib, Pandas, scikit-learn, urllib, beautiful-soup, Jupyter notebook.
- Extensive background in working with Linux, Mac and Windows.
- Efficient communication skills.
- Fluent in both English and Chinese.

CONFERENCES AND TALKS

- Graph-based rhythm interpretation in OMR at IMSIR 2015 conference in Malaga, Spain.
- Rhythm interpretation in Optical Music Recognition at ISMIR 2012 conference in Porto, Portugal.

PUBLICATIONS

- L Chen, **R Jin**, etc. A hybrid HMM-RNN model for OMR. ISMIR 2016.
- **R Jin**, C Raphael. Graph-based Rhythm Interpretation. ISMIR 2015.
- L Chen, **R Jin**, C Raphael. Renotation from Optical Music Recognition. Mathematics and Computation in Music 2015.
- **R Jin**, C Raphael.Optical music recognition on the international music score library project. IS&T/SPIE Electronic Imaging, 2013.
- **R Jin**, C Raphael. Interpreting Rhythm in Optical Music Recognition. ISMIR 2012.