Chenghao Ding

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OBJECTIVE

Position at industries where I can utilize both technology and communication skills to make positive contribution.

SUMMARY OF QUALIFICATION

- **Programming and Development**: 4 years' experience in web technology and object-oriented programming, in-depth knowledge of static webpage development, and professional proficiency in Python, R and other programming languages.
- **Data analytics and manipulation**: 3 years' experience in database query design and management, in-depth knowledge in data extraction, transformation and load, and proficiency in SQL programming, data sets processing and reporting.
- **Communication and management**: 2 years' experience in both verbal and written communication with international students, participation in managing online courses processes, and ability to work with people from diverse cultural backgrounds.
- **Academic research**: 3 years' experience in laboratories, research skills and knowledge in problem solving.

EXPERIENCE

Domestic and International Security Champaign, IL
Graduate Research Assistant May 18—Jul 21

- ***Climate Action Gaming Experiment***: Studied the global warming trend and effects of human activities on climate. Analyzed big climate data, and developed a mathematical model to fit the historical greenhouse gases emission data and did future climate projections. Used different time series model to study the residuals and quantify the uncertainty. Provided suggestions to government policy makers. It involves Python, R, Microsoft Office (Word, Excel and Access).

Department of Nuclear, Plasma, & Radiological Engineering Urbana, IL
Research Intern Aug 2016—Jul 2017

- ***Pipe Risk Research Project***: Developed new algorithms of simulating nuclear power plant pipe breaking risk model and utilized Python programming language and relevant tools for implementation, such as object construction, Python collection selection, algorithm design for electric corrosion simulation, process optimization and thread programming.

EDUCATION

University of Illinois at Urbana-Champaign Urbana, IL
Ph.D. Student in Nuclear Engineering Aug 16—Jul 21

- Overall GPA: 3.51 / 4.0

Master student in Statistics Jan 19—May 20

- Overall GPA: 3.61 / 4.0

Wuhan University Wuhan, China
Master Degree in Power Engineering Jun 15

- Overall GPA: 3.62 / 4.0

ACADEMIC PROJECTS

Movie Reviews Sentiment Analysis and Topic Modeling

- Keras is used to build a convolutional neural networks (CNN) to analyze the sentiment score of Kaggle large movie review datasets
- Compared with the naive bayse model and stochastic gradient descent model, a higher prediction accuracy was achieved
- Analyze bias and variance trade off in the CNN model, and tune the hyperparameters by cross validation to improve the

CNN model's prediction accuracy

- Latent Dirichlet allocation (LDA) method is used to extract the three most correlated topics and the 25 most frequent key words in each topic are found

CNN for Object Recognition in Images (case study on Fashion MNIST dataset)

- 60,000 images are loaded and split into training and testing datasets
- One-hot coding is used for category labels, and a two-layer CNN model is built by Keras and 97.99% test accuracy is achieved
- Tuning hyperparameters with skopt, the best learning rate, filter size of the convolutional layer and the number of dense layer are found
- Test accuracy was improved to 98.36% and loss function converged quickly

Build a recommendation system on MovieLens 100K Dataset

- Singular Value decomposition (SVD) method is used to build the recommend system
- 5 fold cross-validation for training and testing are computed, and the average root mean square error (RMSE) are reported
- The prediction scores for test users are given and missing rating pattern are inspected

Building a Linux-Based High-performance Compute Cluster

- Directed install scheme of the cluster computer and hardware setup
- Administered the high-performance computing cluster

CERTIFICATIONS

Certificate of National Computer Rank Examination as Database Engineer in China Mar 2011

SKILLS

- ***Programing Language****:* Python(Proficient), Keras(Proficient), R(Proficient), Matlab, SQL, SAS
- ***Operating System****:* Linux (LinuxMint), Windows, MacOS
- ***Software****:* R, Matlab, Mathematica, AutoCAD, LaTeX, ArcGIS, RISKMAN, LAMMPS, RELAP5
- ***Language****:* Mandarin (Native), English (Fluent)
- ***Other****:* Hardware Architecting, Cluster Architecting

LANGUAGE PROFICIENCY

Chinese: Native proficiency **English**: Full professional proficiency