

Fenfei Guo

qingmarr
✉ guofenfei1991@gmail.com
☎ (+1) 7208785628
📄 csel.cs.colorado.edu/fegu1724/
Date of Birth: 03/28/1991

EDUCATION

University of Colorado at Boulder, USA Aug. 2015 – present
Phd student in Computer Science

- Field of study: Natural Language Processing and Deep Learning

Xi'an Jiaotong University (C9 League), China Sep. 2012 – Jun. 2015
MSc. in Control Theory and Control Engineering

- GPA: **91/100** (Rank 1st in 103)

Ecole Centrale de Lyon, France Sep. 2010 – May 2012
Engineer Diploma (Diplôme d'Ingénieur)

- Master's dual-degree program with National Graduate Fellowship

Xi'an Jiaotong University (C9 League), China Sep. 2008 – July. 2012
BSc. in Information Science and Automatic Control (Obtained in 2012)

- Elite Class named after Hsue-Shen Tsien(CAS & CAE Member) (68/3800)
- GPA: **88.7/100** (top5%) ; Major GPA: **89.1/100**

EXPERIENCE

Research.....

Research on natural language processing and deep learning Sep. 2015 – present
Research Assistant; Advisor: Prof. Jordan Boyd-Graber

- Research on incorporating human knowledge into deep language models, including the domain knowledge from linguistics and the common sense knowledge from knowledge base, etc
- Currently research on multi-sense word embedding and learning better embeddings by user interactions.
 - Developed soft-attentional skip-gram model for learning multi-sense word embedding and easy word sense disambiguation.
 - Built pipeline for task-specific interactive learning.

Research on deep learning algorithms at Microsoft Research Asia Feb. 2014 – Feb. 2015
Research intern; Mentor: Dr.Lintao Zhang

- Built a deep learning framework step by step using C/C++ (CPU/GPU computation supported).
 - The framework is built for the purpose of research. It supports most of the popular network structures including deep neural network and convolutional neural network, as well as various unsupervised feature learning techniques including auto-encoders and RBM. It also supports some of the useful tricks such as dropout, local response normalization, newbob learning rate schedule, etc.
- Research on convolutional neural networks(CNNs).
 - Developed and implemented rotated kernels in CNNs in order to extract rotation-invariant features.
 - Designed synthetic data (arbitrary polygons) as test data to evaluate the proposed method.
- Research on image embedding and zero-shot learning, applied to the Chinese Handwriting Databases.
 - Proposed a bi-network structures based on the minimum classification error(MCE) criteria.
 - Applied unsupervised feature learning techniques including denoising/contractive auto-encoders and their variants, such as convolutional ones and ones combined with clustering objective.

Research assistant at the Inst. of Integrated Automation, XJTU Aug. 2013 – Feb. 2014
Advisor: Prof.Chongzhao Han

- Research on the clustering algorithms

- Proposed to use intervals instead of centers to represent clusters, developed corresponding metric to measure the similarity between an object and a certain cluster.
- Proposed a novel extension of the k -means algorithm based on this representation of clusters, results accepted by ICTAI 2014.

Engineering.....

Intern at French Scientific and Technical Centre for Building, Grenoble May. 2012 – Aug. 2012
Supervisor: Christophe ROUGIER (Research Engineer)

- o Analyzed and compared different simulation approach on Room Acoustics
 - Built geometry models of facilities (concert halls) using CAD
 - Run simulations on various models of facilities using different room acoustic analysis software including CATT Acoustic, ODEON and ICARE
 - Analyzed the particle-based and the ray-based room acoustic simulation approach based on the acoustic parameters calculated, such as Reverberation Time, Early Lateral Energy Fraction, etc.

Student projects.....

Morphological Classification of galaxies based on image processing Jan. 2012 – Apr. 2012

- o Implemented a basic classifier of galaxies using nonlinear SVM, applied on the Bag-of-word representation generated by the k -means algorithm (using the SIFT feature as the local features).

Realization of Human Support Robot Nov. 2011 – Apr. 2011

- o Constructed a support Robot that can follow object of a certain color using CMUcam3

PUBLICATION

[1] **Fenfei Guo**, Deqiang Han, Chongzhao Han. k -intervals: a new extension of the k -means algorithm. In *Proceedings of 26th IEEE International Conference on Tools with Artificial Intelligence (ICTAI'14)*, Limassol, Cyprus. November 2014.

HONORS & AWARDS

National Scholarship, P.R. China 2013

- o Top 1% Prize awarded to the most excellent graduate students in recognition of academic performance

Graduate Fellowship, China Scholarship Council 2010 – 2012

- o Financial support from the Chinese Ministry of Education for excellent students aiming to study abroad

Third Prize at the China Aeromodelling Design Challenge (CADC) 2009

- o Competed on the designing and building of a radio-controlled aircraft (with the empty weight below 800g) that can take off in 40 m with the maximum payload. The aircraft should also be able to fly and drop the load to the required location

Siyuan Scholarship, XJTU 2009

- o Awarded to excellent students in recognition of academic performance (Top 10)

Outstanding Freshmen Scholarship, XJTU 2008

- o Awarded to the freshmen with the most excellent performance (85/3800) at the entrance examination

SKILLS & ABILITY

Programming skills: C/C++, Python.

Deep learning tools: caffe, theano, keras, lasagne, tensor-flow, mxnet

Mathematical ability: Solid knowledge of **statistics** (score 95+ in all related courses), **optimization**, **linear algebra** and **calculus**

LANGUAGES

French: DELF B2 (speaking 21/25)

English: TOEFL 108 (speaking 23)