SHAN LU

8 Lize West Street, Bldg. 13 Unit 2 Apt 1201, Beijing 100102, China

(+86)159-1063-1322 • lushan.frank@gmail.com

Homepage: baizhima.github.io • GitHub Account: baizhima

Education

Renmin University of China **Beijing, China**

Bachelor of Science in Applied Mathematics June 2015(*expected*)

Cumulative GPA: 89.1/100, 3.63/4.0, ranked **1st** in all mathematics double major students

Bachelor of Management in Agricultural Economics and Management, Summa Cum Laude June 2014

Cumulative GPA: 88.6/100, 3.66/4.0, ranking 4/51

Recipient of Renmin University's President Scholarship for Overseas Study(**top 0.1%**, 20 undergraduates per year)

University of California, Davis **Davis, California**

Exchange Student in Mathematics and Economics January 2012 - December 2012

Cumulative GPA: 3.97/4.0, with 9 out of 12 courses graded A+

Stanford University **Stanford, California**

Summer Student in Computer Science June 2014 - August 2014

Highlighted CS courses: Introduction to Programming Design in C(A), Data Structures(A), Object-oriented Programming and Software Development(A+), Computer System and Organization(A), Probability(A+), Numerical Analysis(A+)

Overall CS GPA: 3.87/4.0 (8 courses)

Experiences

Multimedia Computing Laboratory, School of Information, Renmin University of China **Beijing, China**

Undergraduate Research Assistant (Advisor: Prof. Xirong Li) September 2013 - Present

- Implemented Negative Bootstrapping method with SVM on PASCAL VOC 2013 image classification/annotation tasks
- Extracted the 2048-dimensional DSIFT descriptors from raw images by using Bag-of-Words and Clustering
- Reassembled the SVM classifier with a Histogram Intersection Kernel to improve the overall top-5 accuracy by 8%
- Multimedia information retrieval research in annotating public source pictures from Flickr by their tag features and relevance

Dalian Commodity Exchange Research Institute **Beijing, China**

Intern Researcher (Supervisor: Dr. Dapeng Sun) July 2013 - September 2013

- Programmed a dominant contract monthly-effect detector for No.1 Soybean contract in Python, connected to Dalian Commodity Exchange's public API to extract JSON formatted real time turnover data
- Completed an industrial analytical report "U.S. Aluminum Market Premium and London Metal Exchange's Storage Policy"
- Drafted a tutorial about Bloomberg Terminal's API in commodities section research

JunBro ToWords Corporation(one of the top 3 English learning Apps in AppStore China), iOS Division **Beijing, China**

Intern User Experience Designer January 2013 - March 2013

- Secured the internship chance at ToWords with insightful user feedback reports
- Built regression model measuring the correlation between hourly page views with working hours patterns
- Remodeled the user scoring system based on Elo's Rating System, conducted feasibility analysis using historical user data

Publication & Talks

Facial Expression Recognition Based on Discriminant Neighborhood Preserving Non-negative Tensor Factorization and ELM

Gaoyun An, Shuai Liu, Yi Jin, Qiuqi Ruan, and **Shan Lu,** *Mathematical Problems in Engineering (Vol. 2014)*

- Implemented the Extreme Learning Machines (ELM) method to classify human faces features

Game Characteristics and Feedback Period of MOOC (Massive Open Online Courses) Learning **Changsha, China**

Student Speaker, *CCF China National Computer Congress (CCF CNCC 2013), MOOC Sub-forum* October 2013

- Invited due to my distinctive coursework on MOOC Platforms (over 11 Statements of Accomplishment in CS courses)
- Compared MOOC with traditional classes in terms of game features (e.g. goals, rules and feedback systems)

Projects

Gomoku (Five Stones Board Game) December 2014

- Interactive Gomoku Game written in C++ (Command Line) and Python (SimpleGUI)
- Supported functionality: undoing previous moves, tunable AI difficulty

Heap Allocator August 2014

- Stanford CS107 course project. Implemented C library's dynamic memory management functions malloc, free and realloc
- Both utilization and throughput metrics outperform the full-credit line by 32% and 15%

Image Filtering and Hybrid Images February 2014

- Brown CSCI 1430 course project. Extracted spatial frequency signals from cat and dog images and downsampled hybrid images
- Created static images that leads to different interpretation at different viewing distance

Regular Paper Fragment Stitching September 2013

- Treated edges of gray-scale images as vectors and applied Cosine Law of Distance to find closest matches between edges
- Employed *L*-normalization and correlation coefficient optimization to double-sided fragments, achieved 82% accuracy on average
- Achievement: 2nd Prize in China Undergraduate Mathematical Contest in Modeling 2013

More project descriptions and source codes are available through baizhima.github.io/projects

Volunteer Works

Department of Linguistics, University of California Davis June 2012 - October 2012

- Teaching assistant of summer session course Chinese 1A and 3A, providing Chinese tutorial every Monday and Tuesday

Youth Volunteer Association, Renmin University of China September 2011 - December 2011

- Taught elective course "Principles of Economics" at Beijing No.171 High School for 10th grade students

CaiHong(Rainbow) Program, Ministry of Education July 2011

- Served as guide and group leader for visiting students from Chihlee Institute of Technology, Taiwan

MOOC Certificates

- Statements of Accomplishment **with Distinction**: Coding the Matrix (Brown, 97.5%), Bioinformatics Algorithms I (UC San Diego, 97.2%), Computational Investing (Georgia Tech, 100%), Computing for Data Analysis (John Hopkins, 99%), Interactive Programming in Python (Rice, 90.9%), Introduction to Computational Thinking and Data Science (MIT, 93%), Introduction to Databases (Stanford, 90%), Machine Learning (Stanford, 95.6%), Web Application Architectures (University of Mexico, 90.9%)
- Statements of Accomplishment: Engineering as a Service, Part I (UC Berkeley), Statistical Learning (Stanford), Functional Programming in Scala (EPFL)

Skills

- Languages: Native in Chinese, full-proficiency in English
- GRE: 324 (Verbal 154/170, Quantitative 170/170, Analytical Writing 3.5/6.0)
- TOEFL: 108(Reading 30/30, Listening: 29/30, Speaking: 22/30, Writing: 27/30)
- Programming Skills: C/C++, Python, Java, MATLAB, R, HTML/CSS/JavaScript, Visual FoxPro

Scholarships & Awards

- Outstanding Graduate (*Summa Cum Laude*), Renmin University of China — June 2014
- Academic Excellence Scholarship, Renmin University of China — September 2011, September 2013
- Academic Perfection Award, University of California Davis — June 2012
- President Scholarship for Overseas Study (**top 0.1%**, 20 over 2994 students of Class of 2014), Renmin University of China — December 2011
- Award for Outstanding Leadership (class monitor from Sep. 2010 to Dec. 2011), Renmin University of China — May 2011, September 2011
- Champion of SK Quiz (Issue No. 498), Beijing Television Youth Channel (BTV-Youth) — May 2009
- Champion of e-Sports competition (Warcraft III: The Frozen Throne), Beijing No.5 High School — July 2008
- Place in top 8, Beijing Sudoku Tournament — July 2007