Junhao **Hua**

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ℹ 2 Feb 1991, Longyou, Zhejiang, China
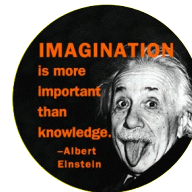
Machine Learning Engineer

Bio. I am currently a 4th-year PhD Student at College of ISEE, Zhejiang University, China, working with Chunguang Li on Variational Bayesian Algorithms and their applications in Distributed Systems.

Research interests. My Ph.D research work covers a range of issues : **variational Bayesian inference, stochastic/distributed optimization, probabilistic graphical models, transfer learning, multitask learning and sensor networks**. Currently, I am interesting in variety of approaches for deep learning (CNN, GAN, Deep Bayesian Learning, etc.) and their applications to computer vision (image processing, video analysis, etc.).

🎓 Education

Sep 2013 – Jun 2018 (expected)	**PhD Candidate** in Circuits and Systems, *Zhejiang University* (ZJU), Hangzhou Center for Statistical Information and Image Processing (SI^{2}P) *Advisor : Prof. Chunguang Li* **GPA** : 4.1/5.0
Sep 2009 –Jun 2013	**Bachelor of Engineering**, *Zhejiang University of Technology* (ZJUT), Hangzhou Double Majors in Computer Science & Automation *Advisor :Prof. Shenyong Chen* **GPA** : 3.78/5.0 | **Rank** : 2/58

📖 Publications

- > **Junhao Hua**, Chunguang Li, "Distributed Robust Kalman Filtering By Variational Bayesian Approximations," in preparation.
- > **Junhao Hua**, Chunguang Li, "Distributed Jointly Sparse Bayesian Learning with Quantized Communication," submitted to *IEEE Transactions on Cybernetics*.
- > **Junhao Hua**, Chunguang Li, and Hui-Liang Shen, "Distributed learning of predictive structures from multiple tasks over networks," *IEEE Transactions on Industrial Electronics* (**ZJU-TOP100, SCI**), to be published, doi : 10.1109/TIE.2016.2588463.
- > **Junhao Hua**, Chunguang Li, "Distributed variational Bayesian algorithms over sensor networks," *IEEE Transactions on Signal Processing* (**TOP SCI**), vol.64, no.3, pp.783–798, Feb 2016.

☰ Skills

Programming Skills :	**C/C++**, Matlab, LATEX, Python, Java, Git.
Machine Learning :	*master in* **Variational Bayes, Distributed Algorithms, Probablistic graphical models**. *familiar with* most statistical machine learning/signal processing algorithms/techqiues. *familiar with* (convex) optimization theory, matrix theory.
Computer Vision :	*have a certain understanding of* image processing (segmentation, classification, etc.), video analysis (object recogintion, tracking, etc.).
Qualification Certificates :	Database technology (3-level), Network engineer (mid-class), Software engineer (mid-class).

</> Projects & Experiences

May 2015 Oct 2013	Computer vision and image processing, ZJU , C/Matlab/Python > *Object Recognition* based on SIFT feature implemented by Matlab mixed with C. > *Recommender Systems* based on latent factor models and matrix factorization. > Implementation of *Image Seamless Editing* by solving Poisson equations. > *Image Denoising* based on non-linear anistropic diffusion techniques. > 🐙 : sift, MFResys, PoissonImageEditing, ImageDenoising. Object Recognition | Image Processing | Recommender Systems | Python

Apr 2014 Feb 2014	**Action/Behavior Recognition in Videos, ZJU, Matlab** › Extract the spatio-temporal features and obtain "Bag of words" represetation by clustering (k-means) the extracted features ; › Infer the posterior by pLSA/LDA (unsupervised Learning) or by simple classfications (KNN, SVM) ; › Propose a simple method called 'voting' to achieve multiple actions recogintion task. › ⬡ : github.com/huajh/action_recognition Action Recoginition Machine Learning Clustering LDA "Bag of Words" Representation
May 2013 Dec 2012	**Brain MR image segmentation, ZJUT, Bachelor Thesis** › Apply the GMM, student-t mixture model, and Dirichlet process based infinite mixture modelto the brain MR image clustering problem ; › Derive the detail variational Bayesian inference process. › Improve these three algorithms by using laplacian graph (manifold learning) ; › ⬡ : github.com/huajh/variational_bayesian_clusterings Mixture Model Clustering Dirichlet Process Variational Bayes Manifold Learnig
Nov 2012 Jul 2012	**C/C++ Engineer Internship, R&D, State Street (Hangzhou), China** › Responsible for the maintenance and development of Princeton Financial Systems. › As well as in charge of improving the performance of the system by integrating new technologies. C/C++ programming C performance optimization portfolio
Jul 2012 May 2011	**Member of project team, Institute of intelligent systems, ZJUT** › Oct 2011-May 2012, write a paper *Traffic routing algorithm based on the spatial complex networks* ; › May-Sep 2011, work on the project : *Motion Sensing PPT based on Kinect* | *Programmer*. complex networks kinect C#
Dec 2011 Oct 2011	**Tiny Software development, ZJUT, C/C++/JAVA** › Oct-Dec 2011, *Online Works Show Platform* | *Leader*. I designed and implemented a lightweight relational object JDBC package, which is used for the programming of the server. Got the 2nd place of the contest judged by the TaoBao UED. ⬡ : github.com/huajh/showplatform › Nov 2011, *Unix File System* | *Independent developer*. The system is implemented by the C/C++. It has basic shell commands, well performed memory management, as well as the users management, and it supports parallel operation. ⬡ : github.com/huajh/unix_file_sys JAVA Unix software development Database Sql Server

🔠 Languages

English :	Reading	⬤ ⬤ ⬤ ⬤ ⬤	CET-4 : 502
	Listening	⬤ ⬤ ⬤ ⬤ ◯	CET-6 : 478
	Speaking	⬤ ⬤ ⬤ ◯ ◯	

🔨 Honors & Awards

Fall 2016	National Scholarship for Graduate Students of Zhejiang University (¥30,000).
Fall 2016	Outstanding graduate student of Zhejiang University.
Spring 2013	Outstanding undergraduate student of Zhejiang University of Technology (ZJUT).
2010 - 2012	Scholarship and Merit Student of ZJUT(1st-class (<5%), 1 time ; 2nd-class (<10%), 2 times).
2011 & 2012	First-class Mathematical modeling Contest of ZJUT. (<5%, 2 times)
Fall 2011	Second prize of National Mathematical Contest in Modeling (<6.5%).
Fall 2010	First prize of National college students Mathematical Contest (non-math) in Zhejiang (<3%).

💡 Interests

Sports :	Basketball, Football, Climbing, Extreme sports, Wilderness survival.
Arts :	Photography, Painting, Movies.
Misc :	Traveling, Quantitative investment.

(last update : 13 Apr. 2017)