

# Junhao HUA

## PERSONAL INFO.

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PLACE AND DATE OF BIRTH: LongYou, Zhejiang, China | 2 Feb 1991  
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## EDUCATION

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SEP 2013 – **PhD Candidate** in Circuits and Systems, *Zhejiang University (ZJU)*, Hangzhou  
JUN 2018 (expected) Center for Statistical Information and Image Processing (SI<sup>2</sup>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

## RESEARCH INTERESTS

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- ◇ **Bayesian Inference:** Variational Bayes, Probabilistic graphical models, Topic model.
- ◇ **Distributed Machine Learning:** Stochastic optimization, Distributed algorithms, Sensor networks.
- ◇ **Deep Learning:** Generative Adversarial Nets, Bayesian deep learning.
- ◇ **Applications:** Video analysis, Image processing, NLP.

## PUBLICATIONS

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- **Junhao Hua**, Chunguang Li, “Distributed Robust Kalman Filtering By Variational Bayesian Approximations,” in preparing.
- **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.

## PROJECTS & EXPERIENCES

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OCT 2013 - MAY 2015	<p><b>Computer vision and image processing, ZJU, c/Matlab/python</b></p> <ul style="list-style-type: none"><li>◇ <u>Object Recognition</u> based on SIFT feature implemented by Matlab &amp; c programming.</li><li>◇ <u>Recommender Systems</u> based on latent factor models and matrix factorization.</li><li>◇ for <u>Image Seamless Editing</u> based on solving Poisson equations.</li><li>◇ Non-linear Anisotropic Diffusion Techniques for <u>Image Denoising</u>.</li></ul> <p>code@github: <a href="#">sift</a>, <a href="#">MFResys</a>, <a href="#">PoissonImageEditing</a>, <a href="#">ImageDenoising</a>.</p>
FEB 2014 - APR 2014	<p><b>Video Action/Behavior Recognition, ZJU, Matlab Programmer</b></p> <p>Behavior recognition via sparse spatio-temporal features; k-means for clustering and inference by unsupervised Learning (pLSA/LDA) or supervised Learning(KNN, SVM, Voting for Classification).</p> <p>Project code: <a href="https://github.com/huajh/action_recognition">https://github.com/huajh/action_recognition</a></p>
DEC 2012 - MAY 2013	<p><b>Brain MR image segmentation, ZJUT, Bachelor Thesis</b></p> <p>The Gaussian mixture model, students't finite mixture model, and Dirichlet process based infinite mixture model are applied to clustering problem and inferred by variational Bayesian algorithms. Using the manifold assumption, three modified/improved variational mixture models are proposed based on laplacian graph and applied to the brain MRI segmentation.</p> <p>Project code: <a href="https://github.com/huajh/variational_bayesian_clusterings">https://github.com/huajh/variational_bayesian_clusterings</a></p>
NOV 2010 - APR 2012	<p><b>Projects at ZJUT</b></p>
MAR-APR 2012	<p><b>Software Park Outsourcing Collaboration Platform   Leader</b></p> <p>This is the work of the Outsourcing innovative applications contest. The server is implemented by JSP + Servlet + Hibernate. I'm in charge of the design of the platform architecture.</p>
OCT-DEC 2011	<p><b>Online Works Show Platform   Leader</b></p> <p>I designed and implemented a lightweight relational object JDBC package, which is used for the programming of the server. Got the 2<sup>nd</sup> place of the contest judged by the TaoBao UED.</p>
NOV 2011	<p><b>Unix File System   Developer</b></p> <p>The system is implemented by the standard C. It has basic shell commands, well performed memory management, as well as the users management, and it supports parallel operation.</p>
NOV 2010 - JAN 2011	<p><b>"If Home"Campus Logistics Co., Ltd.   CTO</b></p> <p>This is the work of the Cerberus Cup Business Plan Competition. I responsible for the design and the implementation of the e-commerce website.</p>

## WORK EXPERIENCE

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JUL - NOV 2012	<p><b>C/C++ Engineer Trainee, R&amp;D, State Street, Hangzhou, China</b></p> <p>Responsible for the maintenance and development of Princeton Financial Systems. Determined to optimize performance and explore new technologies.</p>
MAY 2011 - JUL 2012	<p><b>Member of project team, Institute of intelligent systems, ZJUT</b></p>
OCT 2011-MAY 2012	<p>Traffic routing algorithm based on the spatial complex networks   <i>first author</i></p>
MAY-SEP 2011	<p>Motion Sensing PPT based on Kinect   Programmer</p>

## SKILLS

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**English:** *Reading* | Professional working Proficiency

*Listening* | Limited working Proficiency

*Speaking* | Limited working Proficiency

CET-4: 502    CET-6: 478

**ML Foundation:** *master in Variational inference, Distributed ML, PGM*

*familiar with* most statistical machine learning/signal processing

*familiar with* (convex) optimization theory, matrix theory

**ML fields:** *have a certain understanding of* image/video processing, recommender systems, text mining.

**Programming skills:** C/C++, Matlab,  $\LaTeX$ , Java, Python.

**Certificates:** Database technology (3-level), Network & Software engineer (mid-class)

## HONORS& AWARDS

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FALL 2016    National Scholarship for Graduate Students (¥30,000).

FALL 2016    Outstanding graduate student of ZJU.

SPRING 2013    Outstanding undergraduate student of ZJUT.

2010 - 2012    Scholarship and Merit Student of ZJUT(1st-class, 1 time; 2nd-class, 2 times).

FALL 2011    Second prize of National Mathematical Contest in Modeling (MCM).

FALL 2010    First prize of National college students Mathematical Contest (non-math) in Zhejiang.

## INTERESTS

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Basketball, Travel, Photograph, Painting, Movie, Quantitative investment.

(update: 3 Mar. 2017)