Shuji Hao

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Research

Deep Learning, Online Learning, Active Learning, Computer Vision and Data Mining etc.

Education

Nanyang Technological University **2012.08 - 2016.08**
PhD in Machine Learning and Data Mining
Thesis Title: *Online Active Learning and Its Applications*
Advisors: Prof. Chunyan Miao and Prof. Steven C.H. Hoi

Beijing Normal University **2009.08 - 2012.08**
Master in Computer Vision, GPA: 3.54/4.0
Thesis Title: *Research of Upright Correction on the Lying Craniofacial Data*
Advisors: Prof. Mingquan Zhou

Northwest University (China) **2004.08 - 2008.08**
Bachelor in Computer Science, Ranking: **5/100** of major courses
Final Year Project: *A 2D and CT-based 3D Facial Data Collection System*

Experience

A*STAR (AI Lab), Research Scientist **2016.10 - now**
Conduct deep learning related research and development

ViSenze, Internship **2015.05 - 2015.07**
Developed new algorithms to improve deep learning performance on image classification.

Beijing Normal University, Research Assistant **2008.12 - 2009.08**
3D craniofacial restoration algorithms research and development

Project

Automatic Machine Learning **2016.10 - now**
Design new algorithms which can automatically learn the best architecture and hyper-parameters of the deep learning models

Large-scale Image Recognition System **2016.10 - now**
Develop large-scale image recognition system based on distributed learning and deep learning.

Online Active Learning **2012.08 - 2016.08**
Proposed a serial of scalable machine learning algorithms to tackle the low efficiency and high labeling cost of existing algorithms. And the proposed algorithms are also well evaluated both in theory and real-world applications, such as image retrieval, web-scale data mining, cyber-security, crowdsourcing and so on.

Mining the Open Source Projects **2014.01 - 2015.02**
Crawled 1000+ open source projects in GitHub, developed a knowledge base of data schemes, and developed a search engine for data scheme retrieval

3D Model Matching and Recognition **2009.08 - 2012.08**
We developed a 3D craniofacial restoration platform based on soft tissue thickness dataset. In which, we first develop an algorithm to match the 3D facial data in lying position to the ones in upright position. And then we also proposed a GPU-based method to compute tissue thickness in parallel.

Highly Parallel 3D Surface Crack Simulation **20010 - 2011**
We developed a highly Parallel 3D Surface Crack Simulation algorithm based on GPU, in which a new data structure is proposed to speed up the information retrieval. The proposed algorithm is applied to simulate the crack on 3D rigid materials for artistic purpose, such as ceramics.
Techniques: C, C++ (MVC, STL), QT, CUDA, GPU, OpenGL

Publication

1. **Shuji Hao**, Peilin Zhao, Jing Lu, Steven Hoi, Chunyan Miao, Chi Zhang, "SOAL: Second Order Online Active Learning". The IEEE International Conference on Data Mining (ICDM 2016). Barcelona, Spain.
2. Chi Zhang, Peilin Zhao, **Shuji Hao**, "ROM: A Robust Online Multi-task Classification Approach". The IEEE International Conference on Data Mining (ICDM 2016). Barcelona, Spain.
3. **Shuji Hao**, Peilin Zhao, Steven C. H. Hoi, Chunyan Miao, "Learning Relative Similarity from Data Streams: Active Online Learning Approaches". (CIKM 2015). Melbourne, Australia: 1181-1190
4. **Shuji Hao**, Steven C. H. Hoi, Chunyan Miao, Peilin Zhao, "Active Crowdsourcing for Annotation". (WI-IAT) (2) 2015: 1-8, Singapore
5. **Shuji Hao**, Mingquan Zhou, Zhongke Wu, Pengfei Xu, Hongming Zhang, "Highly Parallel Surface Crack Simulation". (CGIV 2011): 82-86, Singapore
6. **Shuji Hao**, Jing Lu, Peilin Zhao, Steven C.H. Hoi, Chunyan Miao, Chi Zhang, "Active Learning with Expert Advice". ACM TKDD, (Under Review))
7. **Shuji Hao**, Peilin Zhao, Steven C.H. Hoi, Chunyan Miao, "Second-order Online Active Learning Algorithms and Its Applications". ACM TKDE, (Under Review))
8. Chi Zhang, **Shuji Hao**, Peilin Zhao, Yengchai Soh, Bu Sung Lee and Steven Hoi, "Distributed Multi-task Classification: A Decentralized Online Learning Approach", (IJCAI 2017), (Under Submission)
9. **Shuji Hao**, Peilin Zhao, Steven C.H. Hoi, Chunyan Miao,"Online Multi-task Relative Similarity Learning", (IJCAI, 2017), (Under Submission)
10. **Shuji Hao**, Steven C.H. Hoi, Chunyan Miao, "When Crowdsourcing Meets Machine Learning, A Survey". (Under Submission)

Language

Mandarin (Native), English (Fluent), Japanese (Basic)

Honor

'Research Scholarship', Nanyang Technological University,	2012 - 2016
'Academic Scholarship', Northwest University,	2004 - 2008
'CIKM Travel Grant', ACM SIGIR,	2015
'Excellent Leader', Northwest University,	2006
'National Mathematical Contest in Modeling', 2rd,	2006