Hanchen Xiong

CONTACT INFORMATION	Technikstr.21 A Institute of Computer Science University of Innsbruck Innsbruck, A-6020, Austria	☎: (+43) 0 676 5077548 FAX: (+43) 512 53268 ✉: hanchenx@gmail.com ⓘ: iis.uibk.ac.at/public/xiong

RESEARCH INTERESTS

Machine learning, Bayesian statistics, Computer Vision, Computational Neuroscience, Robotics

Probabilistic graphical models, structured output learning, mulit-label prediction, Bayesian learning, kernel machines, advanced Markov chain Monte Carlo methods, neural networks, approximate inference, visual understanding, sensori-motor learning, robotic cognition learning.

EDUCATION

University of Innsbruck, Innsbruck, Austria

Ph.D. Candidate, Computer Science　　　　　　　　**09, 2011-(expected) 04 2015**

- Dissertation: *Optimization, Inference and Learning on Structure Domains: Theories and Some Applications in Visual Perception*
- Supervisor: Pro. Dr. Justus Piater, Dr. Sandor Szedmak

University College London, London, UK

M.Sc., Machine Learning　　　　　　　　**09, 2009-10, 2010**

- Thesis: *Investigate the Use of Random Finite Sets to Track Quantum Dots* (**Distinction**)
- Supervisor: Dr. Simon Julier

Huaqiao University, Quanzhou, China

B.Eng., Computer Science and Technology　　　　　　　　**09, 2005-07, 2009**

EMPLOYMENT EXPERIENCE

University of Innsbruck, Innsbruck, Austria
Researcher　　　　　　　　**04, 2011 - present**

Kuang-chi Institute of Advanced Technology, Shengzhen, China
Machine Learning Engineer　　　　　　　　**10, 2010 - 01, 2011**

PROJECTS

EU FP7 (European Union Seventh Framework Program) project "Xperience", grant agreement Nr. 270273.

PUBLICATION LIST

Hanchen Xiong, Sandor Szedmak, Justus Piater. *Implicit Learning of Simpler Output Kernels for Multi-Lable Prediction*, NIPS workshop on Representation and Learning Methods for Complex Outputs (NIPS-RLCO2014).

Hanchen Xiong, Sandor Szedmak, Justus Piater. *Towards Maximum Likelihood: Learning Undirected Graphical Models using Persistent Sequential Monte Carlo*, The 6th Asian Conference on Machine Learning (ACML2014), **Best Paper Award**. Recommended to Machine Learning journal with longer version.

Hanchen Xiong, Sandor Szedmak, Justus Piater. *Scalable, Accurate Image Annotation with Joint SVMs and Output Kernels*, Accepted (As one of selected papers from ESANN 2014 for Neurocomputing).

Hanchen Xiong, Sandor Szedmak, Antonio Rodríguez Sánchez, Justus Piater. *Towards Sparsity and Selectivity: Bayesian Learning of Restricted Boltzmann Machine for Early Visual Features*,In Proceedings of the 24th International Conference on Artificial Neural Networks (ICANN14), 2013, Springer.

Hanchen Xiong, Sandor Szedmak, Justus Piater. *Joint SVM for Accurate and Fast Image Tagging*,In Proceedings of the 22nd European Symposium on Artificial Neural Network (ESANN14).

Hanchen Xiong, Sandor Szedmak, Justus Piater. *Comparing Binary Hamiltonian Monte Carlo and Gibbs Sampling for Training Discrete MRFs with Stochastic Approximation*, International Conference on Artificial Intelligence and Statistics (AISTATS14).

Wörgötter Florentin, Geib Chris, Tamosiunaite Minija, Aksoy Eren Erdal, Piater Justus, **Xiong Hanchen**, Ude Ales, Nemec Bojan, Kraft Dirk, Krüger Norbert, Wächter Mirko, and Asfour Tamim. *Structural bootstrapping - a novel concept for the fast acquisition of action-knowledge*. IEEE Transactions on Autonomous Mental Development (Submitted)

Hanchen Xiong, Sandor Szedmak, Justus Piater. *3D Object Class Geometry Modeling with Spatial Latent Dirichlet Markov Random Fields*, In Proceedings of the 35th German Conference on Pattern Recognition (GCPR13), pp 51-60, 2013, Springer.

Hanchen Xiong, Sandor Szedmak, Justus Piater *Homogeneity Analysis for Object-Action Relations Reasoning in Kitchen Scenarios*, In Proceedings of 2nd Workshop on Machine Learning for Intelligent Systems (MLIS13), pp 37-44, 2013, ACM.

Hanchen Xiong, Sandor Szedmak, Justus Piater *A Study of Point Cloud Registration with Probability Product Kernel Functions*, In Proceedings of 2013 International Conference on 3D Vision (3DV13), pp 207-214, 2013, IEEE.

Hanchen Xiong, Sandor Szedmak, Justus Piater *Efficient, General Point Cloud Registration With Kernel Feature Maps*, In Proceedings of 10th International Conference on Computer and Robot Vision (CRV13), pp 83-90, 2013, IEEE.

Qing Lei **Hanchen Xiong** *A New Binary-tree-based Algorithm for XML Data Model Extraction* Computer Engineering and Design, Issue 13, pp 3205-3208, 2009.

INVITED TALKS	**Homogeneity Analysis for Object-Action Relations**, Malloca, Spain

Xperience Summer School   04,October, 2013

Point Cloud Registration With Kernel Feature Maps, TU Berlin, Germany

DGR-Tage 2012   29,July,2012

PROFESSIONAL SERVICES

Program Committee

- 37th Annual Workshop of Austiran Association for Pattern Recognition

Reviewing

- (Journal) Frontiers in Computational Neuroscience
- IEEE Transaction on Image Processing
- IEEE Transactions on Autonomous Mental Development

- 2015 IEEE International Conference on Robotics and Automation (ICRA 2015)
- 2014 IEEE/RSJ International Conference on Robots and Systems (IROS 2014)
- 2014 IEEE International Conference on Robotics and Automation (ICRA 2014)

- 2014 IEEE International Conference on Robotics and Automation (ICRA 2013)

SKILLS

Programming

- C++, Matlab: good command
- Python, Java, R: less often used

Libraries and Tools

OpenCV, PCL, LaTex

Operation Systems

Unix/Linux, Windows

Languages

- English: fluent
- Mandarin: mother tone
- German: beginner

HONORS AND
AWARDS

Best Paper Award, 6th Asian Conference on Machine Learning, 2014

2nd Provincial Prize, Programming Contest of Pan-Pearl River Delta, China, 2009

1st Provincial Prize, China Undergraduate Mathematical Contest in Modeling, 2009

2nd Provincial Prize, China Undergraduate Mathematical Contest in Modeling, 2008

Outstanding Thesis Award, Huaqiao University, China, 2009

Outstanding Graduate Award, Huaqiao University, China, 2008

End of CV. Updated on 10,02,2015