Coriolis B413, ENPC ParisTech
6-8, Av Blaise Pascal
Champs-sur-Marne 77455 France
(+33) 1 64 15 21 77
hus@imagine.enpc.fr
https://hushell.github.io

Shell Xu Hu

Research Interests

Machine Learning — Probabilistic graphical models, Structured prediction, Deep generative models.

Optimization — Proximal algorithms, Stochastic block-coordinate decent, ADMM.

Computer Vision — Scene understanding, Inverse graphics.

Education

2015.3–now **PhD in Machine Learning and Computer Vision**,
École des Ponts ParisTech, France.

2012.9–2015.3 **Master in Computer Science**,
Oregon State University, USA.

2011.9–2012.9 **Master in Computer Vision and Artificial Intelligence**,
Universitat Autonòma de Barcelona, Spain.

2006.9–2010.7 **Bachelor in Software Engineering**,
Hangzhou Dianzi University, China.

Projects

2017.6–now **Deep generative models for semi-supervised semantic segmentation**, *with Guillaume Obozinski, Mathieu Aubry and Nikos Komodakis at École des Ponts*.

2015.10–now **New optimization algorithms for probabilistic graphical models**, *with Guillaume Obozinski at École des Ponts*.

2013.7–2015.5 **Probabilistic image segmentation**, *with Chris Williams and Sinisa Todorovic at Oregon State University*, paper,code.

2014.5–2014.10 **Structured output learning with approximate inference**, *with Jiaolong Xu in Google Summer of Code 2014*, ipython notebook.

2013.5–2013.10 **Large-scale learning of general structured output models**, *with Patrick Pletscher in Google Summer of Code 2013*, ipython notebook.

2012.11–2015.3 **Next generation phenomics for tree of life**, *with Sinisa Todorovic and Tom Dietterich at Oregon State University*, project webpage.

2011.10–2012.9 **Towards real-time part-based pedestrian detection**, *with Marco Pedersoli and Jordi Gonzalez at Universitat Autonòma de Barcelona*, paper, code.

Papers

- S. X. Hu, S. Zagoruyko and N. Komodakis, **Exploring Weight Symmetry in Deep Neural Networks**, Submitted to CVPR 2018.
- S. X. Hu, G. Obozinski, **SDCA-Powered Inexact Dual Augmented Lagrangian Method for Fast CRF Learning**, Accepted at AISTATS 2018.
- S. X. Hu, C. K. I. Williams and S. Todorovic, **Tree-Cut for Probabilistic Image Segmentation**, Posted on arXiv 11 June 2015.
- M. Pedersoli, S. X. Hu, J. Gonzalez and X. Roca, **Towards a Real-Time Pedestrian Detection based only on Vision**, IEEE Transactions on Intelligent Transportation System, 2014.
- S. X. Hu, M. Lam, S. Todorovic, T. G. Dietterich, A. Cirranello, P. Velazco, N. Simmons, M. O'Leary, **Zero-Shot Learning and Detection of Teeth in Images of Bat Skulls**, ICCV Workshop on Computer Vision for Accelerated Bioscience, 2013.
- M. Q. Lam, J. R. Doppa, S. X. Hu, A. Reft, S. Todorovic, T. G. Dietterich, M. Daly, **Learning to Detect Basal Tubules of Nematocysts in SEM Images**, ICCV Workshop on Computer Vision for Accelerated Bioscience, 2013.
- J. Xu, S. Ramos, S. X. Hu, D. Vázquez and A. M. López, **Multi-task Bilinear Classifiers for Visual Domain Adaptation**, NIPS Workshop on New Directions in Transfer and Multi-Task: Learning Across Domains and Tasks, 2013.
- S. X. Hu, C. Jiang, W. Zhang, J. Zhang, R. Yu, C. Lv, **An Event Based GUI Programming Toolkit for Embedded System**, APSCC, 2010.

Teaching

Fall 2015 **Teaching Assistant**, *Probabilistic Graphical Models*, Master in Mathématiques / Vision / Apprentissage, Ecole Normale Supérieure de Cachan.

Fall 2011 **Teaching Assistant**, *Fundamentals of Informatics*, Department of Computer Science, Universitat Autònoma de Barcelona.

Jobs

2010.7–2011.7 **Research Engineer**, *Grid and Service Computing Lab, Hangzhou Dianzi University*.

2009.10–2010.4 **Intern**, *Huawei Technologies Co. Ltd.*.

2008.11–2009.5 **Intern**, *NewMsg Technologies Co. Ltd.*.