Shell Xu Hu

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*

Research Interests

Machine Learning	Probabilistic graphical models, variational inference, deep generative models.
Optimization	Proximal algorithms, stochastic gradient methods, ADMM.
Computer Vision	Semantic segmentation, computational imaging, object recognition.

Education

2015.3–2019.1	**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

2015.10–now	**New optimization algorithms for probabilistic graphical models**, *with Guillaume Obozinski and Nikos Komodakis at École des Ponts.*
2018.6–2018.11	**Bayesian inference and information theory for transfer/ meta/ few-shot/ continual learning**, *with Andreas Damianou, Pablo G. Moreno, Sungsoo Ahn, Zhenwen Dai and Neil D. Lawrence at Amazon.*
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 Autònma de Barcelona*, paper, code.

Papers

- S. X. Hu, P. G. Moreno, A. Damianou, N. D. Lawrence, **beta-BNN: A Rate-Distortion Perspective on Bayesian Neural Networks** , NeurIPS-BDL 2018.
- S. Ahn, S. X. Hu, A. Damianou, N. D. Lawrence, Z. Dai, **Variational Mutual Information Distillation for Transfer Learning** , NeurIPS-CL 2018.
- S. X. Hu, S. Zagoruyko and N. Komodakis, **Exploring Weight Symmetry in Deep Neural Networks**, Tech. Report 2018.
- S. X. Hu, G. Obozinski, **SDCA-Powered Inexact Dual Augmented Lagrangian Method for Fast CRF Learning**, 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.

Jobs

2018.6–2018.9 **Applied Scientist Intern**, *Amazon Cambridge*.
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.*.