

PATRICK PLETSCHER

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INTERESTS

I have a passion for identifying and solving challenging machine learning problems in industry. I'm particularly eager to work on personalization, classification and forecasting applications in the context of large-scale data sources. Naturally, I'm also interested in distributed systems (such as Apache Spark) that enable efficient solutions to these machine learning problems.

EDUCATION

Oct 2007 – Oct 2012 | *Ph.D., Computer Science, Machine Learning*
ETH ZÜRICH, SWITZERLAND
Supervisor: Prof. Joachim M. Buhmann

Oct 2002 – Sep 2007 | *M.Sc., Computer Science*
ETH ZÜRICH, SWITZERLAND
Major: Computational Science

ACADEMIC & PROFESSIONAL EXPERIENCE

APR 2016 – JUL 2016 | *Senior Data Scientist*
UPSOLVER, TEL AVIV, ISRAEL
Deep Learning for ad ranking and real-time bidding.

AUG 2014 – MAR 2016 | *Research Scientist*
YAHOO LABS, HAIFA, ISRAEL
Developing large-scale machine learning models in Apache Spark for the prediction of the click-through-rate of ads in Yahoo Gemini native.

JUL 2013 – MAR 2014 | *Machine Learning Scientist*
AMAZON, BERLIN, GERMANY
Machine learning for forecasting the demand of products in the Amazon catalog.

OCT 2007 – DEC 2012 | *Research & Teaching Assistant*
ETH ZÜRICH, SWITZERLAND

JUN 2010 – SEP 2010 | *Research Scientist Intern*
MICROSOFT RESEARCH, CAMBRIDGE, UK
Advisors: Sebastian Nowozin, Pushmeet Kohli, Carsten Rother

AUG 2006 – JAN 2007 | *Research Scientist Intern*
MITSUBISHI ELECTRIC RESEARCH LABS (MERL), CAMBRIDGE, USA
Advisor: Matthew Brand

MAR 2007 – JUL 2007 | *Teaching Assistant*
OCT 2005 – JUL 2006 | ETH ZÜRICH, SWITZERLAND

PUBLICATIONS

International Conferences

- Simon Lacoste-Julien, Martin Jaggi, Mark Schmidt, and **Patrick Pletscher**. Block-Coordinate Frank-Wolfe Optimization for Structural SVMs. In *Proceedings of the Thirtieth International Conference on Machine*

Learning (ICML), 2013. Acceptance rate: 24%

- **Patrick Pletscher** and Sharon Wulff. LPQP for MAP: Putting LP solvers to better use. In *Proceedings of the Twenty-Ninth International Conference on Machine Learning (ICML)*, 2012. Acceptance rate: 27%
- **Patrick Pletscher** and Pushmeet Kohli. Learning low-order models for enforcing high-order statistics. In *Proceedings of the Fifteenth International Conference on Artificial Intelligence and Statistics (AISTATS) 2012*, pages 886–894. JMLR: W&CP 22, 2012. Acceptance rate: 33%
- **Patrick Pletscher** and Cheng Soon Ong. Part & Clamp: An efficient algorithm for structured output learning. In *Proceedings of the Fifteenth International Conference on Artificial Intelligence and Statistics (AISTATS) 2012*, pages 877–885. JMLR: W&CP 22, 2012. Acceptance rate: 33%
- **Patrick Pletscher**, Sebastian Nowozin, Pushmeet Kohli, and Carsten Rother. Putting MAP back on the map. In *33rd Annual Symposium of the German Association for Pattern Recognition (DAGM)*, volume 6835 of *Lecture Notes in Computer Science*, pages 111–121. Springer, 2011. Acceptance rate: 46%
- **Patrick Pletscher**, Cheng Soon Ong, and Joachim M. Buhmann. Entropy and Margin Maximization for Structured Output Learning. In *Proceedings of the 20th European Conference on Machine Learning (ECML)*, volume 6321 of *Lecture Notes in Computer Science*, pages 83–98, 2010. Acceptance rate: 18%
- **Patrick Pletscher**, Cheng Soon Ong, and Joachim M. Buhmann. Spanning Tree Approximations for Conditional Random Fields. In *Proceedings of the Twelfth International Conference on Artificial Intelligence and Statistics (AISTATS) 2009*, pages 408–415. JMLR: W&CP 5, 2009. Acceptance rate: 40%
- Matthew Brand and **Patrick Pletscher**. A conditional random field for automatic photo editing. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2008. Full oral presentation (63 out of 1593)

Journals

- Isabelle Guyon, Jiwen Li, Theodor Mader, **Patrick Pletscher**, Georg Schneider, and Markus Uhr. Competitive baseline methods set new standards for the NIPS 2003 feature selection benchmark. *Pattern Recognition Letters*, 28(12):1438–1444, 2007

International Workshops

- Martin Jaggi, Simon Lacoste-Julien, Mark Schmidt, and **Patrick Pletscher**. Block-Coordinate Frank-Wolfe for Structural SVMs. In *NIPS Workshop on Optimization for Machine Learning*, 2012
- **Patrick Pletscher** and Sharon Wulff. A Combined LP and QP Relaxation for MAP. In *NIPS Workshop on Discrete Optimization in Machine Learning (DISCML)*, 2011

PATENTS

- Matthew Brand and **Patrick Pletscher**. Method and Apparatus for Touching-up Images, 2012. US 8160396

TEACHING EXPERIENCE

Teaching assistant for the following classes at ETH Zürich:

- Computational Intelligence Lab (2012, 2011, 2010).
- Image Analysis with Probabilistic Graphical Models (2011, 2010, 2009, 2008).
- Informatics for Mechanical Engineers (2009).
- Visual Computing (2008).
- Computational Science (2007, 2006).

LANGUAGES & COMPUTER SKILLS

Languages: German (native), English (fluent), French (basic)
Programming: Scala, Python, C++, Matlab, Ruby
Data Science: Spark, HDFS/Hadoop, Amazon Web Services
Webdevelopment: Ruby on Rails, HTML, CSS, Javascript
Tools: vim, Git/Subversion, Unix development tools, \LaTeX
Databases: MongoDB, PostgreSQL
OS: Linux, Mac OS X

SCIENTIFIC REVIEWING & VOLUNTEERING

- NIPS (2012, 2013, 2014, 2015)
- ICML (2015 won a reviewer award)
- JMLR (2009, 2012, 2015)
- PAMI (2008, 2012)
- Transactions on Neural Networks (2014)
- Mentoring a student for Google Summer of Code 2013 to support the Shogun machine learning library.