

# PATRICK PLETSCHER

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## INTERESTS

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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

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| Oct 2007 – Oct 2012 | <i>Ph.D., Computer Science, Machine Learning</i><br>ETH ZÜRICH, SWITZERLAND<br>Supervisor: Prof. Joachim M. Buhmann |
| Oct 2002 – Sep 2007 | <i>M.Sc., Computer Science</i><br>ETH ZÜRICH, SWITZERLAND<br>Major: Computational Science                           |

## ACADEMIC & PROFESSIONAL EXPERIENCE

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| OCT 2016 – PRESENT                         | <i>Chief Analytics Officer</i><br>PRICEHUBBLE, ZÜRICH, SWITZERLAND<br>Machine Learning for the real-estate market. Leading an international team of 10+ data scientists and engineers and shaping the technology stack and methodologies. |
| APR 2016 – JUL 2016                        | <i>Senior Data Scientist</i><br>UPSOLVER, TEL AVIV, ISRAEL<br>Deep Learning for ad ranking and real-time bidding.   |
| AUG 2014 – MAR 2016                        | <i>Research Scientist</i><br>YAHOO LABS, HAIFA, ISRAEL<br>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                        | <i>Machine Learning Scientist</i><br>AMAZON, BERLIN, GERMANY<br>Machine learning for forecasting the demand of products in the Amazon catalog.  |
| OCT 2007 – DEC 2012                        | <i>Research &amp; Teaching Assistant</i><br>ETH ZÜRICH, SWITZERLAND   |
| JUN 2010 – SEP 2010                        | <i>Research Scientist Intern</i><br>MICROSOFT RESEARCH, CAMBRIDGE, UK<br>Advisors: Sebastian Nowozin, Pushmeet Kohli, Carsten Rother  |
| AUG 2006 – JAN 2007                        | <i>Research Scientist Intern</i><br>MITSUBISHI ELECTRIC RESEARCH LABS (MERL), CAMBRIDGE, USA<br>Advisor: Matthew Brand  |
| MAR 2007 – JUL 2007<br>OCT 2005 – JUL 2006 | <i>Teaching Assistant</i><br>ETH ZÜRICH, SWITZERLAND  |

## PUBLICATIONS

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### 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

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

## TEACHING EXPERIENCE

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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

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*Languages:* German (native), English (fluent), French (basic)  
*Programming:* Python, Scala, C++  
*Data Engineering:* Spark, Kubernetes, HDFS/Hadoop  
*Cloud:* Docker, Google Cloud, Amazon Web Services  
*Tools:* vim, Git, Unix development tools,  $\text{\LaTeX}$   
*Databases:* PostgreSQL  
*Webdevelopment:* Ruby on Rails, HTML, CSS, Javascript  
*OS:* Linux, Mac OS X

## SCIENTIFIC REVIEWING & VOLUNTEERING

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- 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.