

# PATRICK PLETSCHER

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## SUMMARY

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Experienced in leading and implementing machine learning (ML) and data engineering projects from inception to production in various domains and companies (Amazon, Yahoo, PriceHubble, Tensor Technologies, smallpdf). Knowledgeable and highly experienced with technologies such as Spark, TensorFlow, Airflow, dbt, Kubernetes and AWS/Google cloud.

## EDUCATION

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Oct 2007 – Oct 2012 | *Ph.D., Computer Science / Machine Learning*  
ETH ZÜRICH, SWITZERLAND  
Structured output prediction and its applications in computer vision and NLP.  
**Supervisor:** Prof. Joachim M. Buhmann

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

## PROFESSIONAL EXPERIENCE

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NOV 2021 – PRESENT | *Head of Data*  
SMALLPDF, ZURICH, SWITZERLAND

JUN 2019 – AUG 2021 | *Senior Data Scientist*  
TENSOR TECHNOLOGIES, ZUG, SWITZERLAND

OCT 2016 – MAR 2019 | *Chief Analytics Officer*  
PRICEHUBBLE, ZURICH, SWITZERLAND

APR 2016 – JUL 2016 | *Machine Learning Consultant*  
UPSOLVER, TEL AVIV, ISRAEL

AUG 2014 – MAR 2016 | *Research Scientist*  
YAHOO LABS, HAIFA, ISRAEL

JUL 2013 – MAR 2014 | *Machine Learning Scientist*  
AMAZON, BERLIN, GERMANY

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

## LANGUAGES & COMPUTER SKILLS

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*Languages:* German (native), English (fluent), French (basic)  
*Programming:* Python, Scala, C++, Go  
*ML & Data:* Spark, TensorFlow, PyTorch, sklearn, xgboost, Airflow, dbt, SQL, Kafka  
*Cloud:* Kubernetes, Docker, GitOps, Google Cloud, Amazon Web Services  
*OS:* Linux, Mac OS X

## 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).

## 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.