Jesse Hendrik Krijthe

about

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interests

Statistical Learning:
Model Selection
Semi-Supervised
Gaussian Processes
Missing Data
Meta-Learning
Heterogeneous Data

motivation

Improving the understanding and ease of use of statistical learning methods to aid in answering complex questions through the use of data.

education

2012-Now — Ph.D. candidate in Machine Learning — Leiden University & Delft University of Technology
Topic: *Robust Semi-Supervised Learning*
Joint appointment in the Department of Molecular Epidemiology of the Leiden University Medical Center and the Pattern Recognition & Bioinformatics group of Delft University of Technology. Part of the COMMIT research programme.
Advisors: Prof. Marco Loog & Prof. J.N. Kok

2010-2012 — M.Sc. Computer Science (cum laude) — Delft University of Technology
GPA 9.1/10.0
With a focus on Pattern Recogntion & Machine Learning courses, including a multimedia information retrieval course at Leiden University.
Advisors: Prof. Marco Loog & Dr. Tin Kam Ho (see below)

Summer 2011 — Well-being Innovation Summer School — EIT ICT Labs, Helsinki
Intensive program on developing entrepreneurship skills with applications to ICT solutions for problems in health and well-being. In Vierumacki, Finland and Eindhoven, The Netherlands. Received highest score on final examination.

2007–2010 — B.Sc. in Econometrics — Erasmus University Rotterdam
GPA 9.0/10.0
Thesis: 'Time-varying Predictability of sports games' supervised by the dean of the faculty, Prof.Dr.Ph.H.B.F. Franses
Awards: Cum Laude Bachelor I Award (GPA 8.9/10.0)

2008-2009 — Bachelor's Honours Class — Erasmus University Rotterdam
Course Modules: Risk Management, Immigration Policy, Mergers & Acquisitions
Research Essays: "New revenue models in the software industry: How to make money by giving your product away" & "Current evidence for a "long tail" demand curve"

Fall 2009 — Semester Abroad — University of Bergen, Norway
Courses: Artificial Intelligence, Natural Resource & Environmental Economics, Scandinavian Area Studies

2005-2007 — Junior College Utrecht — University Utrecht
Program that allows high school students to follow the science part of the high school curriculum at the university by spending 40% of their time at the university each week. The courses offer both more depth and time is allotted for extra course modules. Modules: Computer modeling, Pharmacology, Astronomy & Nano-science

2001-2007 — High School — Revius Lyceum, Doorn
Bilingual (English-Dutch) education with focus on the sciences and electives in Latin, philosophy and advanced English. Participated in exchange programs with Danish and Czech students. Finalist in a national English speech competition.

academic

Spring 2012 — Research Internship — Alcatel-Lucent Bell Labs

Looking into understanding classifier behaviour and meta-learning through 'Data Complexity' measures, which are descriptions of the intrinsic difficulties of pattern recognition problems. In particular we studied the effect of meta-learning using cross-validation measures as meta-features on classifier selection. The research was carried out at Bell Labs in Murray Hill, New Jersey over a 6 month period under the supervision of Dr. Tin Kam Ho.
Grants: Hendrik Muller Fonds
Supervisors: Dr. Tin Kam Ho (Bell Labs) & Prof. Marco Loog (TU Delft)

2009-2010 — Research Assistant Prof. Robert Dur — Erasmus University Rotterdam

Statistical analysis of a large survey dataset on differences in the effects on well-being of incentive schemes between men and women. Also assisted in the practical implementation of an empirical study on the effect of monetary incentives on sales performance and motivation in fitness clubs.

2008-2010 — Teaching Assistant — Erasmus University Rotterdam

Statistical Methods & Techniques (February 2010 - May 2010)
Introduction to Programming (September 2008 - November 2008)

publications

Projected Estimators for Robust Semi-supervised Classification
Jesse H. Krijthe, Marco Loog
Machine Learning (Accepted conditional on minor revisions) (2016). 2016

Robust Semi-supervised Least Squares Classification by Implicit Constraints
Jesse H. Krijthe, Marco Loog
Pattern Recognition 63 (2017) pp. 115–126. 2017

Feature-Level Domain Adaptation
Wouter M. Kouw, Jesse H. Krijthe, Marco Loog, Laurens Van der Maaten
Journal of Machine Learning Research (Accepted) (2016). 2016

Optimistic Semi-supervised Least Squares Classification
Jesse H. Krijthe, Marco Loog
Proceedings of the 23rd International Conference on Pattern Recognition (To Appear), 2016, Cancun, Mexico

The Peaking Phenomenon in Semi-supervised Learning
Jesse H Krijthe, Marco Loog
Structural, Syntactic, and Statistical Pattern Recognition (Lecture Notes in Computer Science Volume 10029), 2016

Pan-cancer subtyping in a 2D-map shows substructures that are driven by specific combinations of molecular characteristics
Erdogan Taskesen, Sjoerd M. H. Huisman, Ahmed Mahfouz, Jesse H. Krijthe, Jeroen Ridder, Anja Stolpe, Erik Akker, Wim Verheagh, Marcel J. T. Reinders
Scientific Reports 6 (Apr. 2016) p. 24949. 2016

On Measuring and Quantifying Performance: Error Rates, Surrogate Loss, and an Example in SSL
Marco Loog, Jesse H. Krijthe, Are C. Jensen
Handbook of Pattern Recognition and Computer Vision, Ch. 1.3, Ed. Chen, C. H. (2016). World Scientific, 2016

Implicitly Constrained Semi-Supervised Least Squares Classification
Jesse H. Krijthe, Marco Loog
14th International Symposium on Advances in Intelligent Data Analysis XIV (Lecture Notes in Computer Science Volume 9385), 2015, Saint Étienne. France

Implicitly Constrained Semi-Supervised Linear Discriminant Analysis
Jesse H. Krijthe, Marco Loog

Proceedings of the 22st International Conference on Pattern Recognition, 2014, Stockholm, Sweden

Improving cross-validation based classifier selection using meta-learning
Jesse H. Krijthe, Tin Kam Ho, Marco Loog
Proceedings of the 21st International Conference on Pattern Recognition, 2012, Tsukuba, Japan

teaching

Supervisor (together with Marco Loog):

- Tom Viering (M.Sc.): Active Learning by Discrepancy Minimization

Gave lectures in the following courses:

- Short Course on Pattern Recognition (Undergraduate level): 2014, 2015
- Pattern Recognition (Graduate level): 2015
- Advanced Pattern Recognition (Graduate level): 2015

Teaching Assistant:

- Pattern Recognition (Graduate level): 2012, 2013, 2014
- Short Course on Pattern Recognition (Undergraduate level): 2012, 2013, 2014, 2015
- Statistical Methods and Techniques (Undergraduate level): 2010
- Introduction to programming (Undergraduate level): 2008

software

RSSL
: An R package providing implementations of various semi-supervised learning methods

Rtsne
: R interface for a C++ implementation of the Barnes-Hut tsne algorithm

experience

Fall 2011 — De Jeugdzaak, Amsterdam — Consulting
Data gathering and application development to build a tool to help local governments gain insights into medical needs of the youth in their municipality.

2005-2010 — Founder & Software developer — Calox Software
Co-founded company providing web-based tools for Dutch secondary schools to help reduce administrative burden and help students manage their time.

personal interests

In my free time, I enjoy running and hiking, both for recreation and by training for organized events. I have participated in marathons and half-marathons, and completed the four days marches in Nijmegen, The Netherlands (4x50k walk) multiple times. In 2014, I had the pleasure of climbing Mount Kilimanjaro in Tanzania. While I finished an 80k walk once, my current athletic goal is to complete an 80k ultra-marathon and still be alive afterwards.