

Curriculum Vitae: G.J.J. van den Burg

November, 2017

PERSONAL DETAILS

Gerrit Jan Johannes (Gertjan) van den Burg
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EDUCATION

- 2012 – NOW **Ph.D. Machine Learning** [Erasmus University Rotterdam, The Netherlands](#)
– Dissertation title: *Algorithms for Multiclass Classification and Regularized Regression*.
– Supervisors: prof. P.J.F. Groenen & dr. A. Alfons.
- 2010 – 2012 **M.Sc. Econometrics** [Erasmus University Rotterdam, The Netherlands](#)
– Thesis: *A New Multiclass Support Vector Machine – An Approach using Iterative Majorization and Huber hinge errors*.
– Supervisor: prof. P.J.F. Groenen at the Econometric Institute
- 2009 – 2012 **M.Sc. Applied Physics** [Delft University of Technology, The Netherlands](#)
– Thesis: *Criticality in One-dimensional Triplet and Quadruplet Contact Processes*. Involved high-performance GPU simulations.
– Supervisor: prof. G.T. Barkema at the Institute for Theoretical Physics of Utrecht University, The Netherlands.
- 2006 – 2009 **B.Sc. Applied Physics** [Delft University of Technology, The Netherlands](#)
– Thesis: *Segmentation Algorithms for a Quantitative Description of α -synuclein Aggregation*.
– Supervisor: dr. B. Rieger

RESEARCH INTERESTS

Machine learning, multiclass classification, sparse regression, distributed computing, artificial intelligence

PAPERS

- [1] Van den Burg, G.J.J. and Groenen, P.J.F.. [GenSVM: A Generalized Multiclass Support Vector Machine](#). *Journal of Machine Learning Research*, 17(225):1-42, 2016.
- [2] Van den Burg, G.J.J. and Hero, A.O.. [Fast Meta-Learning for Adaptive Hierarchical Classifier Design](#). *Arxiv preprint arXiv:1711.03512*, 2017.
- [3] Van den Burg, G.J.J. and Groenen, P.J.F. and Alfons, A.. [SparseStep: Approximating the Counting Norm for Sparse Regularization](#). *Arxiv preprint arXiv:1701.06967*, 2017.
- [4] Van den Burg, G.J.J. and Groenen, P.J.F. and Alfons, A.. Smoothed ℓ_q -Regularized Regression. Work in progress.
- [5] Van den Burg, G.J.J.. Abed: Automated Benchmarking of Machine Learning Methods. Work in progress.

AWARDS & GRANTS

Top Educator Award, Erasmus School of Economics, 2016

Research Grant to visit University of Michigan, Erasmus Trustfonds, 2016

VISITING POSITIONS

Feb. 2017 **University of Michigan, U.S.A.**, visiting prof. dr. A.O. Hero
Feb. – Apr. 2016 **University of Michigan, U.S.A.**, visiting prof. dr. A.O. Hero
May 2014 **Stanford University, U.S.A.**, visiting prof. dr. P.J.F. Groenen

TEACHING EXPERIENCE

2016 – 2017 **Thesis Supervisor**, Erasmus University Rotterdam, The Netherlands
– Supervisor for several MSc and BSc theses in Econometrics

2016 – 2017 **Educational Innovation Member**
– Set up technical infrastructure for autograded programming exercises using Autolab

2015 – 2016 **Lecturer**, Erasmus University Rotterdam, The Netherlands
– MATLAB module in undergraduate programming course.

2014 – 2016 **Teaching Assistant**, Erasmus University Rotterdam, The Netherlands
– Various courses on Programming, Data Analysis, Econometrics, and Mathematics

ACADEMIC SOFTWARE PACKAGES

- **SmartSVM**: Python package for *Fast Meta-Learning for Adaptive Hierarchical Classifier Design*.
- **SparseStep**: R package for *SparseStep: Approximating the Counting Norm for Sparse Regularization*.
- **GenSVM**: C library for the method from *GenSVM: A Generalized Multiclass Support Vector Machine*.
- **Abed**: Python package for easy benchmarking of machine learning methods on a compute cluster.
- **SyncRNG**: Python and R package for synchronized random number generation.

WORK EXPERIENCE

2012 – 2016 **Freelance Programmer**, **Stichting Studiebegeleiding Leiden**.
2011 – 2012 **Student Assistant**, **Erasmus School of Economics**
2007 – 2012 **Tutor**, **Stichting Studiebegeleiding Leiden**

SELECTED CONFERENCE TALKS

- [1] Van den Burg, G.J.J.. Benchmarking Machine Learning Methods on LISA. In: *Surfsara Super D Event 2016*, Amsterdam, The Netherlands. Invited speaker.
- [2] Van den Burg, G.J.J. and Groenen, P.J.F.. SparseStep: Approximating the Counting Norm for Sparse Regularization. In: *Conference of the International Federation of Classification Societies (IFCS 2015)*, Bologna, Italy.
- [3] Van den Burg, G.J.J. and Groenen, P.J.F.. An Extended Comparison of Multiclass Support Vector Machines. In: *21-st International Conference on Computational Statistics (COMPSTAT 2014)*, Geneva, Switzerland.
- [4] Van den Burg, G.J.J. and Groenen, P.J.F.. Flexible Multiclass Support Vector Machines. In: *Machine Learning Summer School (MLSS 2013)*, Tübingen, Germany. Poster presentation.

PROFESSIONAL SERVICES

2014 – 2015 Treasurer ERIM PhD Council
2013 – 2014 Organizer reading groups on Machine Learning and Probabilistic Inference

LANGUAGES

Speaking: Fluent: Dutch, English
Programming: Fluent: C, Python, R, and Matlab. Experienced: Java.