Laurens van der Maaten

123 Washington Street #30D, New York NY 10006
lvdmaaten@gmail.com, http://lvdmaaten.github.io

EXPERIENCE

Facebook AI Research. Research Scientist. New York, March 2015–now.

Delft University of Technology. Assistant Professor (with tenure). Delft, The Netherlands, January 2015–now.

Delft University of Technology. Assistant Professor (tenure-track). Delft, The Netherlands, April 2013–December 2014.

Netherlands Institute for Advanced Study. Fellow. Wassenaar, The Netherlands, February 2013–April 2013.

Delft University of Technology. Post-doc in (EU FP7) SSPNet project, working with Dr. Emile Hendriks, Dr. Bob Duin, Dr. Marco Loog, and Dr. David Tax. Delft, The Netherlands, August 2009–March 2013.

University of California, San Diego. Post-doc with Prof. Lawrence Saul. San Diego CA, December 2009–November 2010.

Tilburg University. Ph.D. student under supervision of Prof. Eric Postma and Prof. Jaap van den Herik, Tilburg, The Netherlands, October 2008–August 2009. Ph.D. received at June 23rd 2009 (*cum laude*).

Dutch State Service for Cultural Heritage (RCE). Ph.D. student working with Dr. Guus Lange, Amersfoort, The Netherlands, August 2005–August 2009.

Maastricht University. Ph.D. student under supervision of Prof. Eric Postma and Prof. Jaap van den Herik, Maastricht, The Netherlands, August 2005–October 2008.

RESEARCH VISITS

University of Geneva. Visiting postdoctoral researcher working with Dr. Marc Mehu, Geneva, Switzerland, January 2012.

Imperial College London. Visiting postdoctoral researcher working with Prof. Maja Pantic, London, UK, July 2011.

University of Toronto. Visiting Ph.D. student working with Prof. Geoffrey Hinton, Toronto, ON, Canada, January 2008–June 2008.

EDUCATION

Tilburg University. Doctoral degree (*cum laude*) for Ph.D. thesis "Feature Extraction from Visual Data". Thesis defense on June 23rd 2009.

Baylor University. Courses in Computer Science, Waco TX, July 2003–August 2003.

Maastricht University. Doctorandus (= Dutch M.Sc.) in Knowledge Engineering and Computer Science, Maastricht, The Netherlands, September 2001–August 2005.

RESEARCH INTERESTS

My research interests are in machine learning and computer vision. More specifically, I am interested in dimensionality reduction, embedding, metric learning, generative models, deep learning, time series modeling, structured prediction, regularization, art analysis, face recognition, texture analysis, shape matching, tracking, and writer identification.

SELECTED PUBLICATIONS

My h-index is 16 and my total number of citations is $2,142$ (Google Scholar; retrieved on April 12, 2015). The following publications are representative for my work:

L.J.P. van der Maaten. Accelerating t-SNE using Tree-Based Algorithms. *Journal of Machine Learning Research* 15(Oct):3221–3245, 2014. [Impact factor: 3.42]

L. Zhang and L.J.P. van der Maaten. Preserving Structure in Model-Free Tracking. *IEEE Transactions on Pattern Analysis and Machine Intelligence* 36(4):756-769, 2014. [Impact factor: 4.795; 12 citations]

L.J.P. van der Maaten, M. Chen, S. Tyree, and K.Q. Weinberger. Learning with Marginalized Corrupted Features. In *Proceedings of the International Conference on Machine Learning (ICML), JMLR W&CP* 28:410–418, 2013. [Acceptance rate: 24%; 34 citations]

L.J.P. van der Maaten, M. Welling, and L.K. Saul. Hidden-Unit Conditional Random Fields. In *Proceedings of the International Conference on Artificial Intelligence & Statistics (AI-STATS)*, JMLR W&CP 15:479–488, 2011. [Acceptance rate: 28%; 24 citations]

L.J.P. van der Maaten and G.E. Hinton. Visualizing High-Dimensional Data Using t-SNE. *Journal of Machine Learning Research* 9(Nov):2579–2605, 2008. [Impact factor: 2.949; 762 citations]

RESEARCH GRANTS

Learning the Fundamental Symmetries in Video Data.
    Funding agency: Netherlands Scientific Organisation (NWO)
    PI: Prof.dr. Max Welling (University of Amsterdam)
    Co-PI: Dr. L.J.P. van der Maaten (TU Delft)
    Amount: 217k€
    Start date / end date: January 2015 / January 2019
    Duration: 48 months

HDCLUSTER
Development of novel clustering methods for gene expression, proteomic and imaging readouts by concurrently mining the Allen Brain Atlas.
    Funding agency: FET Flagship (Human Brain Project)
    PIs: Prof.dr. Boudewijn Lelieveldt (LUMC), Prof.dr. Marcel Reinders (TU Delft / LUMC), Dr. Laurens van der Maaten (TU Delft / LUMC), Prof. A. van den Maagdenberg (LUMC), Dr. W. van Roon (LUMC)
    Amount: 234k€
    Start date / end date: September 2014 / September 2016.
    Duration: 24 months

Technology in Motion.
    Funding agency: Netherlands Scientific Organisation (NWO)
    Project coordinator: Prof.dr. Bob van Hilten (LUMC)
    Partners: Leiden University Medical Center, TU Delft (EWI and TBM), Free

University Amsterdam.
PI at TU Delft-EWI: Dr. L.J.P. van der Maaten
Amount for TU Delft-EWI: 210k€
Start date / end date: January 2014 / January 2018
Duration: 48 months

Learning from Corruption.
Funding agency: Netherlands Scientific Organisation (NWO)
PI: Dr. L.J.P. van der Maaten
Amount: 207k€
Start date / end date: July 2014 / July 2018
Duration: 48 months

Integration of Technological Solutions for Imaging, Detection, and Digitisation of Hidden Elements in Artworks (INSIDDE).
Funding agency: European Commission (FP7-ICT 2011.8.2; STReP)
Project coordinator: Dr. S. Garcia (Treelogic)
PI at TU Delft: Dr. L.J.P. van der Maaten
Partners: Treelogic (ES), Universidad de Oviedo (ES), Fundacion ITMA (ES),
   TU Delft (NL), 3DDynamics (BE), Consiglio Nazionale delle Ricerche (IT),
  Regional Museum of History - Stara Zagora (BG), and Doerner Institute (DE).
Amount for TU Delft: 401k€
Start date / end date: January 2013 / January 2016
Duration: 36 months

Smart Assisted Living involving Informal careGivers (SALIG++).
Funding agency: European Commission and Netherlands Organisation for Health
   Research and Development (ZonMW); Ambient Assisted Living Programme
Project coordinator: Dr. G. Juell-Skielse (Stockholm University)
PI at TU Delft: Dr. L.J.P. van der Maaten
Partners: Stockholm University (SE), Almende (NL), HI Iberia (ES),
   TU Delft (NL), FeSalud (ES), Stockholm LänsLandsting (SE), PIAP (PL),
   Actimage (LU), and Divitel (NL).
Amount for TU Delft: 280k€
Start date / end date: June 2013 / June 2016
Duration: 36 months

Visualizing High-Dimensional Data using Dimensionality Reduction.
Funding agency: Netherlands Scientific Organisation (NWO)
PI: Dr. L.J.P. van der Maaten
Amount: 28k€
Start date / end date: December 2010 / December 2011
Duration: 12 months
Research team at UC San Diego: Dr. L.J.P. van der Maaten and Prof. L.K. Saul

AWARDS   *SNN Machine Learning Award.* Awarded once per year by the Netherlands Society for Neural Networks (SNN) to a researcher or research group who has achieved an important result in machine learning. I received the award for my work on new machine-learning techniques for data visualization. Amount: 5k€.

Merck Molecular Activity Visualization Challenge Winner. Best visualization of molecular activity data of Merck published on Kaggle.com. Amount: 2k$.

NIAS-Lorentz Fellowship. Awarded by the Netherlands Institute for Advanced Study

and the Lorentz Center for my research on "Texture Analysis for the Arts". Awarded in March 2012. Amount: 9k€.

AAAI-08 Most Innovative Video Award. Awarded for the video entitled "Digital Analysis of Van Gogh Paintings" at the conference of the Association for the Advancement of Artificial Intelligence, July 2008, Chicago, IL, USA. Joint work with Eric Postma.

MUSCLE CIS Coin Competition 2007 Winner. Best classification performance in a benchmark on automatic classification of modern coins based on coin photographs, Vienna, Austria, August 2007. Joint work with Paul Boon.

Travel awards. I received travel awards for NIPS 2010 (sponsored by Google; $800), AI-STATS 2009 (sponsored by Nokia; $550), and CAA 2009 (sponsored by Computer Applications for Archaeology; $400).

SOFTWARE   I maintain the Matlab Toolbox for Dimensionality Reduction. Since its introduction in 2006, the toolbox has been downloaded over $35,000$ times. I also maintain a website on t-Distributed Stochastic Neighbor Embedding (t-SNE), which is a new technique for the visualization of high-dimensional data that I developed together with Prof. Geoffrey Hinton. My website on t-SNE contains implementations of the technique in various programming language. My personal homepage also features Matlab implementations of, among others, state-of-the-art system for writer identification, fields of experts, and matrix relational embedding. I also contributed to the open-source visualization software Divvy and to Torch's manifold and metriclearning repositories.

TEACHING AND SUPERVISION

I have received the Dutch University Qualification Teaching (BKO) in October 2012.

In the past, I have supervised two post-doctoral researchers:
- Hamdi Dibeklioglu. *Machine Learning and Computer Vision for Painting Analysis.* July 2013–January 2015.
- Julian Kooij. *Automatic Analysis of Tremors of Parkinson's Patients.* Started October 2014–January 2015.

I am currently co-supervising four Ph.D. students:
- Gorkem Saygili. *Depth Estimation by Combining Active and Passive Stereo Techniques.* Started October 2010 (defense June 2015). Co-supervised with Dr. Emile Hendriks.
- Wouter Kouw. *Machine Learning and Computer Vision for Painting Analysis.* Started September 2013 (expected completion September 2017). Co-supervised with Dr. Marco Loog.
- Wenjie Pei. *Machine Learning and Computer Vision for Assistance of Elderly People.* Started October 2013 (expected completion October 2017). Co-supervised with Dr. David Tax.
- Taygun Kekec. *Learning by Marginalizing Corrupted Features.* Started July 2014 (expected completion July 2018). Co-supervised with Dr. David Tax.

In the past, I have supervised the following Ph.D. students:
- Lu Zhang. *Tracking for Automatic Analysis of Human Eating Behavior.* Defense date: January 30, 2015.

In the past, I have supervised the following M.Sc. students:

- Kevin van Hecke. *Pre-semantic clustering as a bootstrapping method for autonomous drone navigation through the ISS.* Started November 2013 (expected completion July 2014). Co-supervised with Dr. Guido de Croon (TU Delft).

- Harold Selman. *Anomaly Detection for Internet Banking using Supervised Learning on High-Dimensional Data..* March 2014–January 2015. Research performed at Rabobank. Co-supervised with dr. Frank van der Meulen (TU Delft) and Werner Ipenburg (Rabobank).

- Hans Gaiser. *A Stochastic Approach for Selective Search Algorithms.* March 2014–January 2015.

- Madalin Dumitru-Guzu. *Joint Probabilistic Pedestrian Head and Body Orientation Estimation.* September 2013–July 2014. Research performed at Daimler R&D, Ulm, Germany. Co-supervised with Prof. Dariu Gavrila (University of Amsterdam / Daimler R&D).

- Machiel Visser. *Fusing Modalities for Automatic Video Tagging.* April 2012–March 2013. Research performed at PrimeVision, Delft, The Netherlands.

- Frank Teunisse. *Partial Shape Matching for Detecting Conveyability of Suitcases.* January 2012–October 2012. Research performed at Scarabee, Rotterdam, The Netherlands.

I gave lectures at the following Ph.D.-level summer schools:

- Advanced Pattern Recognition (ASCI), Delft, The Netherlands, 2011, 2012, 2013
- Computer Vision by Learning (ASCI), Amsterdam, The Netherlands, 2014
- Computational Intelligence (SIKS), Utrecht, The Netherlands, 2011
- Summer School on Social Signal Processing, Mullsjö, Sweden, 2013
- Spring School on Social Interaction Computing, Almen, The Netherlands, 2010
- Datamining Summer School, Maastricht, The Netherlands, 2008

I have been a lecturer of the following M.Sc./B.Sc. courses:

- Computer Vision (Delft University of Technology; M.Sc.) 2013, 2014
- Machine Learning (Delft University of Technology; M.Sc.) 2013, 2014
- Datamining (Delft University of Technology; B.Sc.) 2014
- Imaging Project (Delft University of Technology; B.Sc.) 2012
- Bachelor Seminar (Delft University of Technology; B.Sc.) 2011, 2012

I have been a teaching assistant for the following M.Sc./B.Sc. courses:

- Pattern Recognition (Delft University of Technology; M.Sc.)
- Foundations of Knowledge Representation and Reasoning (Maastricht University; M.Sc.)
- Databases (Maastricht University; B.Sc.)
- Modeling Nature (Maastricht University; B.Sc.)
- Introduction to Computer Science (Maastricht University; B.Sc.)
- Software Architectures and Software Engineering (Maastricht University; B.Sc.)
- Abstract Datatypes and Algorithms (Maastricht University; B.Sc.)

I was member of the thesis assessment committee of the following Ph.D. students:

- Stephen Tyree, *Some Approaches to Parallel and Distributed Machine Learning*, Washington University in St. Louis, November 2014.
- Philemon Brakel, *The Estimation and Application of Unnormalized Statistical Models*, Ghent University, July 2014.

I was member of the thesis assessment committee of the following M.Sc. students:

- Rinze Bruining. *Investigating Crowdsourcing as a Method to Obtain Robotic Datasets*, Delft University of Technology, 2014.
- Menno Witteveen. *Identification and Elucidation of Expression Quantitative Trait Loci (eQTL) and their Regulating Mechanisms using Decodive Deep Learning*, Delft University of Technology, 2014.
- Christian Vermorken. *Enhancing BCI Based Navigation by Adding Intention Detection and a Virtual Assistant*, Delft University of Technology, 2014.
- Thies Gehrmann. *Conditional random fields for protein function prediction*, Leiden University, 2012.
- Jesse Krijthe. *Improving Cross-Validation Classifier Selection Accuracy through Meta-Learning*, Delft University of Technology, 2012.
- Edwin Jakobs. *Tracking facial micro-features using an ensemble of particle filters*, Delft University of Technology, 2011.
- Bob de Graaf. *Automatic hand gesture recognition using manifold learning*, Maastricht University, 2008.
- Peter Mertens. *Facial emotion classification with Nim and NimBle*, Maastricht University, 2008.
- Marc de Mulder. *Automatic thread count method*, Maastricht University, 2008.
- Alain de Klerk. *Non-linear dimensionality reduction of the document space*, Maastricht University, 2008.

ACTIVITIES   In 2014, I served as a young expert for the "National Think Tank" (*Nationale Denktank*) on Big Data.

Together with Dr. Cees Snoek (University of Amsterdam), I have organized the Netherlands Conference on Computer Vision (NCCV) 2014.

I am vice-chair of the Data Visualization and Data Analysis Task Force of the IEEE CIS Technical Committee on Data Mining.

With Prof. Robert Erdmann, I have organized a NIAS Workshop on *"New Technologies for Art Conservation and History"* (2013).

I have co-organized the Advances in Neural Information Processing Systems (NIPS) 2010 Workshop on *"Challenges of Data Visualization"* (with Prof. Barbara Hammer, Prof. Fei Sha, and Prof. Alexander Smola).

I have co-organized the EuroVis 2013 workshop on *"Visual Analysis using Multidimensional Projections"* (with Dr. Michaël Aupetit). I am have also been guest editor for a special issue of a special issue on the same topic in *Neurocomputing* 150(B):543–644, 2015.

SERVICE

I am an area chair for Neural Information Processing Systems (NIPS) 2015.

I have reviewed research proposals of the Swiss National Science Foundation (SNSF) and the Belgian Agency for Innovation by Science and Technology (IWT).

From 2012 to 2014, I was a book reviewer for Zentralblatt MATH.

In 2014, I was associate editor of IEEE Transactions on Neural Networks and Learning Systems.

I have reviewed papers for a total of 35 different journals. Five prominent journals for which I reviewed are:

- IEEE Transactions on Pattern Analysis and Machine Intelligence
- Journal of Machine Learning Research
- Machine Learning
- Proceedings of the National Academy of Science
- Science

I have been a member of the program committee of 26 different conferences and workshops. Five prominent conferences for which I serve on the program committee are:

- Advances in Neural Information Processing Systems (talk) 2010, 2012, 2013, 2014
- International Conference on Machine Learning (ICML) 2012, 2013, 2014, 2015
- Artificial Intelligence and Statistics (AI-STATS) 2010, 2011, 2012, 2013, 2014, 2015
- ACM SIGKDD Conf. on Knowledge Discovery and Data Mining (KDD) 2011, 2015
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2015

JOURNAL PUBLICATIONS

C.C. Laczny, T. Sternal, V. Plugaru, P. Gawron, A. Atashpendar, H.H. Margossian, S. Coronado, L. van der Maaten, N. Vlassis, and P. Wilmes. VizBin – An Application for Reference-Independent Visualization and Human-Augmented Binning of Metagenomic Data. *Microbiome* 3(1), 2015.

L.J.P. van der Maaten. Accelerating t-SNE using Tree-Based Algorithms. *Journal of Machine Learning Research* 15(Oct):3221–3245, 2014. [Impact factor: 3.42]

L. Zhang and L.J.P. van der Maaten. Preserving Structure in Model-Free Tracking. *IEEE Transactions on Pattern Analysis and Machine Intelligence* 36(4):756-769, 2014. [Impact factor: 4.795; 12 citations]

A. Mahfouz, M. van de Giessen, L.J.P. van der Maaten, S. Huisman, M.J.T. Reinders, M.J. Hawrylycz, and B.P.F. Lelieveldt. Visualizing the spatial gene expression organization in the brain through non-linear similarity embeddings. To appear in *Methods*, 2014. [Impact factor: 4.197]

W. Abdelmoula, K. Skraskova, B. Balluff, R. Carreira, E. Tolner, B.P.F. Lelieveldt, L.J.P. van der Maaten, H. Morreau, A. van den Maagdenberg, R. Heeren, L. McDonnell, and J. Dijkstra. Automatic Generic Registration of Mass Spectrometry Imaging

Data to Histology using Nonlinear Stochastic Embedding. In *Analytical Chemistry* 86(18):9204–9211, 2014. [Impact factor: 5.825]

C.R. Johnson, Jr., P. Messier, W.A. Sethares, A.G. Klein, C. Brown, A. Hoang Do, P. Klausmeyer, P. Abry, S. Jaffard, H. Wendt, S. Roux, N. Pustelnik, N. van Noord, L.J.P. van der Maaten, E.O. Postma, J. Coddington, L.A. Daffner, H. Murata, H. Wilhelm, S. Wood, and M. Messier. Pursuing Automated Classification of Historic Photographic Papers from Raking Light Images. In *Journal of the American Institute for Conservation* 53(3):159–170, 2014.

M. Mehu and L.J.P. van der Maaten. Multimodal Integration of Audio-Visual Cues in the Communication of Agreement and Disagreement. In *Journal of Nonverbal Behavior* 38(4):569–597, 2014. [Impact factor: 1.344]

J.M. Lewis, V.R. de Sa, and L.J.P. van der Maaten. Divvy: Fast and Intuitive Exploratory Data Analysis. *Journal of Machine Learning Research* 14(Oct):3159–5163, 2013. [Impact factor: 3.420]

M. Grimes, W.J. Lee, L.J.P. van der Maaten, and P. Shannon. Wrangling Phosphoproteomic Data to Elucidate Cancer Signaling Pathways. *PLoS One* 8(1):e52884, 2013. [Impact factor: 4.092]

L.J.P. van der Maaten and G.E. Hinton. Visualizing Non-Metric Similarities in Multiple Maps. *Machine Learning* 87(1):33-35, 2012. [Impact factor: 1.956; 19 citations]

L.J.P. van der Maaten and E.A. Hendriks. Action Unit Classification using Active Appearance Models and Conditional Random Fields. *Cognitive Processing* 13:507–518, 2012. [Impact factor: 1.03; 13 citations]

L.J.P. van der Maaten, M. Mahecha, and S. Schmidtlein. Analyzing Floristic Inventories with Multiple Maps. *Ecological Informatics* 9:1–10, 2012. [Impact factor: 1.432]

O. Brinkkemper, L.J.P. van der Maaten, and P.J. Boon. Identification of Myosotis seeds by means of digital image analysis. *Vegetation History and Archaeobotany* 20(5):435-445, 2011. [Impact factor: 1.656]

P.J. Boon, A.G. Lange, L.J.P. van der Maaten, J.J. Paijmans, and E.O. Postma. Digital Support for Archaeology. *Interdisciplinary Science Review* 34(2-3):189–205, 2009. [Impact factor: 0.36]

L.J.P. van der Maaten and G.E. Hinton. Visualizing High-Dimensional Data Using t-SNE. *Journal of Machine Learning Research* 9(Nov):2579–2605, 2008. [Impact factor: 2.949; 762 citations]

THESES

L.J.P. van der Maaten. *Feature Extraction from Visual Data*. Ph.D. thesis *(cum laude)*, Tilburg University, The Netherlands, June 23rd 2009.

L.J.P. van der Maaten. *Improving Automatic Writer Identification*. M.Sc. thesis, Maastricht University, The Netherlands, August 13th 2005.

CONFERENCE PUBLICATIONS

L. Zhang, H. Dibeklioglu, and L.J.P. van der Maaten. Speeding Up Tracking by Ignoring Features. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pages 1266–1273, 2014. [Acceptance rate: 29.9%]

Y. Guo, H. Dibeklioglu, and L.J.P. van der Maaten. Graph-Based Kinship Recognition. In *Proceedings of the International Conference on Pattern Recognition (ICPR)*, pages 4287–4292, 2014.

L. Zhang and L.J.P. van der Maaten. Improving Object Tracking by Adapting Detectors. In *Proceedings of the International Conference on Pattern Recognition (ICPR)*, pages 1218–1223, 2014.

G. Saygili, L.J.P. van der Maaten, and E.A. Hendriks. Stereo Similarity Metric Fusion Using Stereo Confidence. In *Proceedings of the International Conference on Pattern Recognition (ICPR)*, pages 2161–2166, 2014.

G. Saygili, L.J.P. van der Maaten, and E.A. Hendriks. Hybrid Kinect Depth Map Refinement For Transparent Objects. In *Proceedings of the International Conference on Pattern Recognition (ICPR)*, pages 2751–2756, 2014.

P. Messier, C.R. Johnson, H. Wilhelm, W.A. Sethares, A.G. Klein, P. Abry, S. Jaffard, H. Wendt, S. Roux, N. Pustelni, N. van Noord, L.J.P. van der Maaten, and E.O. Postma. Automated Surface Texture Classification of Inkjet and Photographic Media. In *Proceedings of the International Conference on Digital Printing Technologies*, 2013.

L.J.P. van der Maaten. Barnes-Hut-SNE. In *Proceedings of the International Conference on Learning Representations (ICLR)*, 2013. [Oral acceptance rate: 21%; 33 citations]

L. Zhang and L.J.P. van der Maaten. Structure Preserving Object Tracking. In *Proceedings of the IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, pages 1838–1845, 2013. [Oral acceptance rate: 3.2%; 46 citations]

L.J.P. van der Maaten, M. Chen, S. Tyree, and K.Q. Weinberger. Learning with Marginalized Corrupted Features. In *Proceedings of the International Conference on Machine Learning (ICML), JMLR W&CP* 28:410–418, 2013. [Acceptance rate: 24%; 34 citations]

L.J.P. van der Maaten and K.Q. Weinberger. Stochastic Triplet Embedding. In *Proceedings of the IEEE International Workshop on Machine Learning for Signal Processing (MLSP)*, 2012. [12 citations]

J. Fang, A.L. Varbanescu, J. Shen, H. Sips, G. Saygili, and L.J.P. van der Maaten. Accelerating Cost Aggregation for Real-Time Stereo Matching. In *Proceedings of the IEEE International Conference on Parallel and Distributed Systems (ICPADS)*, pages 472–481, 2012.

L.J.P. van der Maaten. Audio-Visual Emotion Challenge 2012: A Simple Approach. In *Proceedings of the International Conference on Multimodal Interaction (ICMI)*, pages 473–476, 2012.

J.M. Lewis, L.J.P. van der Maaten, and V.R. de Sa. A Behavorial Investigation of Dimensionality Reduction. In *Proceedings of the Cognitive Science Society (CSS)*, pages 671-676, 2012. [Oral acceptance rate: 32%]

G. Saygili, L.J.P. van der Maaten, and E.A. Hendriks. Improving Segment-based Stereo Matching using SURF Key Points. In *Proceedings of the IEEE International Conference on Image Processing (ICIP)*, 2012.

G. Saygili, L.J.P. van der Maaten, and E.A. Hendriks. Feature-Based Stereo Matching Using Graph Cuts. In *Proceedings of the ASCI Conference, 2011.*

L. Zhang, L.J.P. van der Maaten, N. Koenderink, F. Golbach and E.A. Hendriks. Pose Estimation and Tracking of Eating Persons in Real-life Settings. In *Proceedings of the ASCI Conference*, 2011.

L.J.P. van der Maaten. Learning Discriminative Fisher Kernels. In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 217–224, 2011. [Acceptance rate: 25%; 23 citations]

L.J.P. van der Maaten, M. Welling, and L.K. Saul. Hidden-Unit Conditional Random Fields. In *Proceedings of the International Conference on Artificial Intelligence & Statistics (AI-STATS)*, JMLR W&CP 15:479–488, 2011. [Acceptance rate: 28%; 24 citations]

L.J.P. van der Maaten. Discussion of "Spectral Dimensionality Reduction via Maximum Entropy" *(invited paper)*. In *Proceedings of the International Conference on Artificial Intelligence & Statistics (AI-STATS)*, JMLR W&CP 15:60–62, 2011. [Acceptance rate: 28%]

D. Hu, L.J.P. van der Maaten, Y. Cho, L.K. Saul, and S. Lerner. Latent Variable Models for Predicting File Dependencies in Large-Scale Software Development. In *Advances of Neural Information Processing Systems (NIPS)*, volume 23, pages 865–873, 2010. [Acceptance rate: 24%]

A. Gelfand, L.J.P. van der Maaten, Y. Chen, and M. Welling. On Herding and the Perceptron Cycling Theorem. In *Advances of Neural Information Processing Systems (NIPS)*, volume 23, pages 694–702, 2010. [Acceptance rate: 24%; 16 citations]

L.J.P. van der Maaten and E.O. Postma. Texton-Based Analysis of Paintings. In *SPIE Optical Engineering and Applications*, volume 7798-16, 2010.

R. Min, L.J.P. van der Maaten, Z. Yuan, A. Bonner, and Z. Zhang. Deep Supervised t-Distributed Embedding. In *Proceedings of the International Conference on Machine Learning (ICML)*, pages 791–798, 2010. [Acceptance rate: 26%; 16 citations]

L.J.P. van der Maaten and E.A. Hendriks. Capturing Appearance Variation in Active Appearance Models. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, pages 34–41, 2010. [10 citations]

L.J.P. van der Maaten, A.G. Lange, and P.J. Boon. Visualization and Automatic Typology Construction of Pottery Profiles. In *Proceedings of the Conference on Computer Applications and Quantitative Methods in Archaeology (CAA)*, 2009.

L.J.P. van der Maaten. Preserving Local Structure in Gaussian Process Latent Variable Models. In *Proceedings of BeNeLearn-09*, pages 81–88, 2009.

L.J.P. van der Maaten. Learning a Parametric Embedding by Preserving Local Structure. In *Proceedings of the International Conference on Artificial Intelligence and Statistics (AI-STATS), JMLR: W&CP* 5, pp. 384–391, 2009. [68 citations]

L.J.P. van der Maaten and E.O. Postma. Texton-based Texture Classification. In *Proceedings of the Belgian-Dutch Artificial Intelligence Conference (BNAIC)*, pages

213–220, 2007.

S. Vanderlooy, L.J.P. van der Maaten, and I. Sprinkhuizen-Kuyper. Off-line Learning with Transductive Confidence Machines: An Empirical Evaluation. In *Proceedings of the International Conference on Machine Learning and Data Mining*, pages 310–323, 2007. [29 citations]

L.J.P. van der Maaten and P.J. Boon. COIN-O-MATIC: A Fast and Reliable System for Coin Classification. In *Proceedings of the MUSCLE Coin Workshop*, pages 7–17, 2006. [34 citations]

L.J.P. van der Maaten and E.O. Postma. Towards Automatic Coin Classification. In *Proceedings of the EVA-Vienna*, pages 19–26, 2006. [24 citations]

L.J.P. van der Maaten, P.J. Boon, J.J. Paijmans, A.G. Lange, and E.O. Postma. Computer Vision and Machine Learning for Archaeology. In *Proceedings of the Conference on Computer Applications and Quantitative Methods in Archaeology (CAA)*, pages 361–367, 2006.

L.J.P. van der Maaten and E.O. Postma. Improving Automatic Writer Identification. In *Proc. of the Belgian-Dutch AI Conference*, pages 260–266, 2005. [32 citations]

SELECTED TECHNICAL REPORTS

L.J.P. van der Maaten, E.O. Postma, and H.J. van den Herik. Dimensionality Reduction: A Comparative Review. Tilburg University Technical Report, TICC-TR 2009-005, 2009. [715 citations]

L.J.P. van der Maaten. An Introduction to Dimensionality Reduction Using Matlab. Technical Report MICC 07–07. Maastricht University, Maastricht, The Netherlands, 2007. [76 citations]

PREPRINTS

L.J.P. van der Maaten, M. Chen, S. Tyree, and K.Q. Weinberger. Marginalizing Corrupted Features. Arxiv 1402.7001, 2014.

INVITED TALKS

Learning Embeddings for Data Visualization and Language Modeling. January 28th, 2015, Netherlands Institute for Neuroscience, Amsterdam, The Netherlands.

Constructing Maps to Visualize Big Data. January 15th, 2015, National Conference on the Mathematics of Operations Research, Lunteren, The Netherlands.

Learning with Marginalized Corrupted Features. October 16th 2014, Delft University of Technology, The Netherlands.

New Technology to Look Inside Paintings. September 25th 2014, eCult Dialogue Day, Dubrovnik, Croatia.

Visualizing Spatial Gene Expression Organization in the Brain with t-SNE. September 23rd 2014, Delft Data Science Symposium on Health, The Netherlands.

Visualizing (Big) Data using t-SNE. June 2nd 2014, Royal Netherlands Academy of Science (KNAW), Amsterdam, The Netherlands.

Visualizing (Big) Data using t-SNE. April 29th 2014, Symposium – Connecting the Bits: Discover the Huge Potential of Big Data, Delft, The Netherlands.

t-SNE and MCF: Constructing and Corrupting Features. March 31st 2014, Facebook HQ, Menlo Park CA.

Visualizing Data using t-SNE. January 13th 2014, Leiden University Medical Center, The Netherlands.

Learning with Marginalized Corrupted Features. December 4th 2013, Tilburg University, The Netherlands.

Using Machine Learning to Visualize (Big) Data. November 5th 2013, Delft Data Science Center, Delft University of Technology, The Netherlands.

Looking at Paintings through the Eyes of a Computer. October 25th 2013, University of Amsterdam, The Netherlands.

Visualizing Data using t-SNE. October 17th 2013, Washington University, St. Louis MO.

Visualizing Data using t-SNE. October 15th 2013, Mind Research Network / University of New Mexico, Albuquerque NM.

Learning with Marginalized Corrupted Features. July 10th 2013, ROKS Workshop, Leuven, Belgium.

Visualizing Data using t-SNE. June 24th 2013, Google Tech Talk, Mountain View CA. [The video of this talk has been viewed over $25,000$ times on Youtube.]

Structure-Preserving Object Tracking and Marginalized Corrupted Features. June 10th 2013, INRIA-LEAR, Grenoble, France.

New Developments in Tracking and Forensic Painting Analysis. June 6th 2013, Netherlands Forensic Institute and Dutch National Police, The Hague, The Netherlands.

Learning with Marginalized Corrupted Features. May 30th 2013, Dutch Association for Pattern Recognition and Image Processing, Utrecht, The Netherlands.

Looking at Paintings through the Eyes of a Computer. April 25th 2013, Netherlands Institute for Advanced Study, Wassenaar, The Netherlands.

Learning with Marginalized Corrupted Features. April 18th 2013, Centrum voor Wiskunde en Informatica (CWI), Amsterdam, The Netherlands.

On Constructing and Corrupting Features. April 1st 2013, Toyota Technological Institute, Chicago IL.

How to Visualize High-Dimensional Data? January 24th 2013, Data Science Meetup, Utrecht, The Netherlands.

New Machine-Learning Techniques for Predictive and Visual Analytics. January 23rd 2013, University of Amsterdam, The Netherlands.

Learning with Marginalized Corrupted Features. November 9th 2012, Radboud University Nijmegen, The Netherlands.

Machine Learning for Data Visualization: New Techniques and Applications. October 26th 2012, SNN Machine Learning Award Lecture, Maastricht, The Netherlands.

Learning by Marginalizing Corrupted Features. October 20th 2012, University of California, San Diego.

Learning when Sensors Break Down. June 22nd 2012, European Space Association (ESA-ESTEC), Noordwijk, The Netherlands.

Stochastic Triplet Embedding. April 20th 2012, Dutch Association for Pattern Recognition and Image Processing, Rijswijk, The Netherlands.

Learning Embeddings for Data Visualization. March 27th 2012, University of Amsterdam, The Netherlands.

Introduction to Embedding for Visualization. February 20th 2012, Dagstuhl Seminar 12081, Germany.

Hidden-Unit Conditional Random Fields. January 27th 2012, University of Geneva, Switzerland.

Visualizing Data using t-SNE. October 17th 2011, University of Groningen, The Netherlands.

Tutorial on Machine Learning for Data Visualization. August 22nd 2011, Dagstuhl Seminar 11341, Germany.

Conditional Random Fields with Hidden Units. June 15th 2011, Imperial College London, United Kingdom.

Hidden-Unit Conditional Random Fields. May 18th 2011, Dutch Association for Pattern Recognition and Image Processing, Utrecht, The Netherlands.

Computer Techniques for Analyzing Archaeological Finds. February 17th 2011, University of Amsterdam, The Netherlands.

Conditional Random Fields with Hidden Units. December 23rd 2010, Tilburg University, The Netherlands.

Conditional Random Fields with Hidden Units. November 22nd 2010, University of California, San Diego.

Visualizing Data using t-SNE. November 8th 2010, University of California, Irvine.

Visualizing Data using t-SNE. April 30th 2010, University of Southern California, Los Angeles.

Capturing Appearance Variation in Active Appearance Models. April 23rd 2010, University of California, San Diego.

Dimensionality Reduction and the Caveats of Convexity. June 23rd 2009, Dimensionality Reduction Symposium, Tilburg, The Netherlands.

Exploring High-Dimensional Data using Dimensionality Reduction. June 9th 2009,

Workshop on Novel Data Mining Strategies for Biochemical Cycles and Biosphere-Atmosphere Interactions, Jena, Germany.

Visualizing Data using t-SNE. April 26th 2009, Tilburg University, The Netherlands.

Visualizing Data using t-SNE. March 13th 2009, Radboud University Nijmegen, The Netherlands.

On Parametric and Non-Metric Variants of t-SNE. April 6th 2009, University of Toronto.

Visualizing Data using t-SNE. March 30th 2009, University of California, San Diego.

Texton-based analysis and visualization of Van Gogh's paintings. October 21st 2008, Van Gogh Museum, Amsterdam, The Netherlands.

Fast and reliable coin classification. January 29th 2007, Maastricht Mathematical Modelling, Maastricht, The Netherlands.

REFERENCES   Available on request.