

- EXPERIENCE** *Facebook AI Research (FAIR)*. Site Lead FAIR New York, supporting a team of 40+ researchers, March 2018–now.
- Facebook AI Research (FAIR)*. Research Director. New York, January 2020–now.
- Facebook AI Research (FAIR)*. Research Scientist. New York, March 2015–January 2020.
- Delft University of Technology*. Assistant Professor (with tenure). Delft, The Netherlands, January 2015–February 2018.
- 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.

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, privacy-preserving machine 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 40 and my total number of citations is 42,249 (Google Scholar; retrieved January, 2021). The following publications are representative for my work:

D. Mahajan, R.B. Girshick, V. Ramanathan, K. He, M. Paluri, Y. Li, A. Bharambe, and L.J.P. van der Maaten. Exploring the Limits of Weakly Supervised Pretraining. In *European Conference on Computer Vision (ECCV)*, pages 185–201, 2018. [Acceptance rate: 31.8%; 461 citations].

G. Huang, Z. Liu, K.Q. Weinberger, and L.J.P. van der Maaten. Densely Connected Convolutional Networks. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2017. [Best paper award; Oral acceptance rate: 2.65%; 13,364 citations].

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; 1,514 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%; 164 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; 17,297 citations]

RESEARCH GRANTS

Learning the Fundamental Symmetries in Video Data.

Funding agency: Netherlands Scientific Organisation (NWO)

PI: Prof.dr. M. 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. B. Lelieveldt (LUMC), Prof.dr. M.J.T. 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. B. 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

CVPR Best Paper Award. Best paper award at the IEEE Conference on Computer Vision and Pattern Recognition (CVPR) for paper: G. Huang, Z. Liu, K.Q. Weinberger, and L.J.P. van der Maaten. Densely Connected Convolutional Networks, 2017.

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 am one of the developers of Classy Vision and of CrypTen. I am I am one of the developers of the visdom tool for scientific visualization (over 6,900 stars on Github). 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 several (Py)Torch 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.

In the past, I have supervised the following Ph.D. students:

- Gorkem Saygili. *Depth Estimation by Combining Active and Passive Stereo Techniques*. Defense date: June 17, 2015. Co-supervised with Dr. Emile Hendriks.
- Wouter Kouw. *Machine Learning and Computer Vision for Painting Analysis*. Defense date: June 5, 2018. Co-supervised with Dr. Marco Loog.
- Wenjie Pei. *Machine Learning and Computer Vision for Assistance of Elderly People*. Defense date: June 13, 2018. Co-supervised with Dr. David Tax.

- Taygun Kekec. *Learning by Marginalizing Corrupted Features*. Defense date: June 7, 2019. Co-supervised with Dr. David Tax.
- Lu Zhang. *Tracking for Automatic Analysis of Human Eating Behavior*. Defense date: January 30, 2015.

I have (co-)supervised the following research interns at Facebook AI Research: Ang Li, Ranjay Krishna, Justin Johnson, Haytham Fayek, Chuan Guo, Ishan Misra, Andreas Veit, Cihang Xie, Abhimanyu Dubey, Yin Cui, Yan Wang, Hexiang Hu, Terrance DeVries, Mandela Patrick, Mimeo Xu, Kexin Yi, and Ruihan Wu.

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

- Kevin van Hecke. *Persistent Self-Supervised Learning Principle: Study and Demonstration on Flying Robots*. November 2013–September 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, 2016, 2018
- Computational Intelligence (SIKS), Utrecht, The Netherlands, 2011
- Summer School on Social Signal Processing, Mulsjö, Sweden, 2013
- Spring School on Social Interaction Computing, Almen, The Netherlands, 2010
- Datamining Summer School, Maastricht, The Netherlands, 2008

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

- Introduction to Computer Vision (African Master on Machine Intelligence), 2019, 2020, 2021
- Big Ideas in AI (New York University; B.Sc.), 2021
- Machine Learning (Cornell Tech; M.Sc.), 2015, 2016, 2017
- 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:

- Damith Senanayake, *Exploratory Analysis of Highly Dimensional Data: Parametric Methods for Dimensionality Reduction, Visualization and Feature Extraction with Applications in Computational Biology*, University of Melbourne, April 2020.
- 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 Decoding 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

Together with Deepti Ghadiyaram, Abhimanyu Dubey, Han Zhao, Dhruv Mahajan, and Olga Russakovsky, I am co-organizing the CVPR 2021 Workshop on Responsible Computer Vision.

Together with Alex Berg, Cheng-Fang Yu, Dhruv Mahajan, Ishan Misra, Vignesh Ramanathan, and Zhenheng Yang, I am co-organizing the CVPR 2021 Workshop on Extreme Computer Vision.

Together with Pengtao Xie, Shanghang Yang, Pulkit Agrawal, Ishan Misra, Cynthia Rudin, Abdelrahman Mohamed, Wenzhen Yuan, Barret Zoph, Xingyi Yang, and Eric Xing, I co-organized the NeurIPS 2020 Workshop on Self-Supervised Learning

Together with Vignesh Ramanathan, Dhruv Mahajan, Alex Berg, Ishan Misra, and Rahul Sukthankar, I co-organized the ICCV 2019 Workshop on Extreme Vision Modeling.

Together with Dr. Marco Loog (Delft University of Technology), I organized the Belgian-Dutch Machine Learning Conference (Benelearn) 2015.

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 inaugural Netherlands Conference on Computer Vision (NCCV) 2014.

I served as 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 was an area chair for Neural Information Processing Systems (NeurIPS) in 2015 and 2018 and senior area chair in 2020; International Conference on Machine Learning (ICML) 2016, 2017, 2018, 2019, and 2021; International Conference on Learning Representations (ICLR) 2017 and 2018; American Association for Artificial Intelligence (AAAI) 2017; for the IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2018 and 2021; and for the European Conference on Computer Vision (ECCV) 2016. I served on the Best Paper Award Committee for NeurIPS 2020.

Since 2016, I am an associate editor for IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI). In 2014, I was associate editor of IEEE Transactions on Neural Networks and Learning Systems (TNNLS).

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.

I have reviewed papers for over 35 different journals. Five prominent journals for which I served as a reviewer are:

- Journal of Machine Learning Research
- Machine Learning
- Proceedings of the National Academy of Science
- Science
- Neural Computation

I have been a reviewer for over 27 different conferences. Five prominent conferences for which I served as a reviewer are:

- Advances in Neural Information Processing Systems (NIPS) 2010, 2012, 2013, 2014, 2015, 2016, 2017
- International Conference on Machine Learning (ICML) 2012, 2013, 2014, 2015, 2016, 2017
- Artificial Intelligence and Statistics (AI-STATS) 2010, 2011, 2012, 2013, 2014, 2015, 2016
- ACM SIGKDD Conf. on Knowledge Discovery and Data Mining (KDD) 2011, 2015
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2015, 2016, 2017

JOURNAL PUBLICATIONS

C. Guo, A.Y. Hannun, B. Knott, L. van der Maaten, M. Tygert, and R. Zhu. Secure multiparty computations in floating-point arithmetic. To appear in *Information and Inference: A Journal of the IMA*, 2021. [Impact factor: 1.36]

G. Huang, Z. Liu, G. Pleis, L.J.P. van der Maaten, and K.Q. Weinberger. Convolutional Networks with Dense Connectivity. In *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2019. [Impact factor: 17.730; 47 citations]

K. van Hecke, G. de Croon, L.J.P. van der Maaten, D. Hennes, and D. Izzo. Persistent Self-Supervised Learning Principle: From Stereo to Monocular Vision for Obstacle Avoidance. In *International Journal of Micro Air Vehicles* 10(2):186–206, 2018. [Impact factor: 1.049]

W. Pei, H. Dibeklioglu, D.M.J. Tax, and L.J.P. van der Maaten. Multivariate Time-Series Classification Using the Hidden-Unit Logistic Model. *IEEE Transactions on Neural Networks and Learning Systems*, 2017. [Impact factor: 4.370; 43 citations]

N. Pezzotti, B.P.F. Lelieveldt, L.J.P. van der Maaten, T. Höllt, E. Eisemann, A. Vilanova. Approximated and User Steerable tSNE for Progressive Visual Analytics. *IEEE Transactions on Visualization and Computer Graphics* 23(7), 2017. [Impact factor: 1.4; 153 citations]

W.M. Kouw, J.H. Krijthe, M. Loog, and L.J.P. van der Maaten. Feature-Level Domain Adaptation. *Journal of Machine Learning Research* 17(171):1–32, 2016. [Impact factor: 3.42; 36 citations]

- Y. Cheng, M.T. Wong, L.J.P. van der Maaten, and E.W. Newell. Categorical analysis of human T cell heterogeneity with one-dimensional soli-expression by nonlinear stochastic embedding. *Journal of Immunology* 196(2):924-932, 2016. [Impact factor: 4.922; 52 citations]
- L.J.P. van der Maaten and R.G. Erdmann. Automatic Thread-Level Canvas Analysis. *IEEE Signal Processing Magazine* 32(4):38-45, 2015. [Impact factor: 5.852; 22 citations]
- M. van Seville, L.J.P. van der Maaten, L. Xie, K. Jarolimek, R. Santbergen, R.A.C.M.M. van Swaaij, K. Leifer, and M. Zemana. Nanocrystal Size Distribution Analysis from Transmission Electron Microscopy Images. *Nanoscale* 7(48):20593-20606, 2015. [Impact factor: 7.394]
- B.M. Hoonhout, M. Radermacher, F. Baart, and L.J.P. van der Maaten. An Automated Method for Semantic Classification of Regions in Coastal Images. *Coastal Engineering* 105:1-12, 2015. [Impact factor: 2.428; 30 citations]
- G. Saygili, L.J.P. van der Maaten, and E.A. Hendriks. Adaptive Stereo Similarity Fusion using Confidence Measures. *Computer Vision and Image Understanding* 135:95-108, 2015. [Impact factor: 1.54; 19 citations]
- 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. [151 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. *Methods* 73:79–89, 2015. [Impact factor: 4.197; 52 citations]
- 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; 1,514 citations]
- 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; 135 citations]
- 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; 43 citations]
- 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. [35 citations]
- 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; 21 citations]

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; 16 citations]

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; 179 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; 40 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; 17,297 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 M. Xu, L.J.P. van der Maaten, and A.Y. Hannun. Data Appraisal Without Data Sharing. In *NeurIPS Workshop on Privacy-Preserving Machine Learning*, 2020.

B. Knott, S. Venkataraman, A.Y. Hannun, S. Sengupta, M. Ibrahim, and L.J.P. van der Maaten. CrypTen: Secure Multi-Party Computation Meets Machine Learning. In *NeurIPS Workshop on Privacy-Preserving Machine Learning*, 2020.

I. Misra and L.J.P. van der Maaten. Self-supervised learning of pretext-invariant representations. In *International Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020. [Acceptance rate: 25%; 142 citations]

C. Guo, T. Goldstein, A.Y. Hannun, and L.J.P. van der Maaten. Certified data removal from machine learning models. In *International Conference on Machine Learning (ICML)*, 2020. [Acceptance rate: 21.8%; 18 citations]

- A. Bakhtin, L.J.P. van der Maaten, J.C. Johnson, L. Gustafson, and R.B. Girshick. PHYRE: A New Benchmark for Physical Reasoning. In *Advances of Neural Information Processing (NeurIPS)*, 2019. [Acceptance rate: 21%; 21 citations]
- T. DeVries*, I. Misra*, C. Wang*, and L.J.P. van der Maaten. Does Object Recognition Work for Everyone? In *CVPR Workshop on Computer Vision for Global Challenges*, 2019. [39 citations]
- H. Hu, I. Misra, and L.J.P. van der Maaten. Evaluating Text-to-Image Matching using Binary Image Selection (BISON). In *ICCV Workshop Closing the Loop Between Vision and Language*, 2019.
- Y. Wang, Z. Lai, G. Huang, B.H. Wang, L.J.P. van der Maaten, M. Campbell, and K.Q. Weinberger. Anytime Stereo Image Depth Estimation on Mobile Devices. In *International Conference on Robotics and Automation (ICRA)*, 2019. [35 citations]
- A. Dubey, L.J.P. van der Maaten, Z. Yalniz, Y. Li, and D. Mahajan. Defense Against Adversarial Images using Web-Scale Nearest-Neighbor Search. In *International Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019. [Acceptance rate: 25.2%; 24 citations]
- C. Xie, Y. Wu, L.J.P. van der Maaten, A. Yuille, and K. He. Feature Denoising for Improving Adversarial Robustness. In *International Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019. [Acceptance rate: 25.2%; 281 citations]
- I. Misra, R.B. Girshick, R. Fergus, M. Hebert, A. Gupta, and L.J.P. van der Maaten. Learning by Asking Questions. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018. [Oral acceptance rate: 2.1%; 37 citations]
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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%]

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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. [16 citations]

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%; 54 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. [21 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.

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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. [30 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. [72 citations]

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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. [47 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. [2,412 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. [162 citations]

INVITED TALKS

CrypTen. December 6th, 2020. NeurIPS 2020 Expo (virtual).

Privacy and Security in Machine Learning. December 3rd, 2020. AI Journey, Moscow, Russia (virtual).

Exploring the Limits of Weakly Supervised Learning. October 21st, 2020. IEEE/IBM What’s Next in AI Symposium (virtual).

Using t-SNE for Data Analysis: A Quick Introduction. September 30th, 2020. BioTuring Webinar (virtual).

The Trade-Offs of Private Prediction. September 26th, 2020. OpenMined Privacy Conference (virtual).

CrypTen. July 30th, 2020. Responsible Data Summit (virtual).

From Visual Recognition to Visual Reasoning. July 1st, 2020. Machines Can See, Moscow, Russia (virtual).

From Visual Recognition to Visual Reasoning. July 1st, 2020. Machine Learning Summer School, Bilkent University, Turkey (virtual).

Adversarial Robustness: The End of the Early Years. June 19th, 2020. CVPR 2020 Workshop on Adversarial Attacks (virtual).

From Visual Recognition to Visual Reasoning. November 18th, 2019. Duke University, Durham NC.

Privacy-Preserving Machine Learning with CrypTen. October 10th, 2019. PyTorch DevCon, San Francisco CA.

From Visual Recognition to Visual Reasoning. September 11th, 2019. German Conference on Pattern Recognition (GCPR), Dortmund, Germany.

From Visual Recognition to Visual Reasoning. September 9th, 2019. Tilburg University, The Netherlands.

Does Object Recognition Work for Everyone? June 16th, 2019. CVPR Workshop on Global Challenges for Computer Vision, Long Beach CA.

Exploring the Limits of Weakly Supervised Learning. June 16th, 2019. CVPR Workshop on Visual Understanding by Learning from Web Data, Long Beach CA.

Making Image Recognition Work in the Real World. June 16th, 2019. CVPR DeepVision Workshop, Long Beach CA.

Developing Efficient Convolutional Networks (And Training Them at Scale). May 24th, 2019. HHMI Janelia Farm, Ashburn VA.

Developing Efficient Convolutional Networks (And Training Them at Scale). May 21st, 2019. Mount Sinai Hospital, New York NY.

Developing Efficient Convolutional Networks (And Training Them at Scale). April 5th, 2019. University of Amsterdam, The Netherlands.

From Visual Recognition to Visual Reasoning. April 4th, 2019. Erasmus University Rotterdam, The Netherlands.

Binary Image Selection: Interpretable Evaluation of Visual Grounding. February 25th, 2019. CVPR AC Meeting, San Diego CA.

From Visual Recognition to Visual Reasoning. November 3rd, 2018. Machine Intelligence Conference, MIT Media Lab, Cambridge MA.

Exploring the Limits of Convolutional Networks. August 30th, 2019. Deep Learning Sydney, Australia.

Visualizing Data using t-SNE. August 1st, 2018. Joint Statistical Meetings (invited talk), Vancouver, Canada.

How Modern Computer Vision and Machine Learning May Impact the Analysis of Art. July 22th, 2018. Gordon Research Conference, Barcelona, Spain.

Do's and Don'ts of using t-SNE to Understand Vision Models. June 18th, 2018. CVPR Workshop on Interpretable Machine Learning for Computer Vision, Salt Lake City UT.

Image Classification: Models and Data. June 13th, 2018. Delft University of Technology, The Netherlands.

Computer Vision for the Arts. April 12th, 2018. The Frick Collection, New York NY.

From Visual Recognition to Visual Reasoning. April 6th, 2018. Awesome IT Symposium, Amsterdam, The Netherlands.

From Visual Recognition to Visual Reasoning. March 5th, 2018. CILVR Seminar, New York University, New York NY.

Two Tales about Image Classification. November 13th, 2017. Vision and Autonomous Systems Seminar, Carnegie-Mellon University, Pittsburgh PA.

From Visual Recognition to Visual Understanding. November 9th, 2017. Belgian-Dutch Artificial Intelligence Conference (keynote), Groningen, The Netherlands.

Two Tales about Image Classification. November 2nd, 2017. Bay Area Vision Meeting

(BAVM), Menlo Park CA.

Efficient Recognition of Large Numbers of Visual Classes. October 13th, 2017. Machine Learning Meetup, Amsterdam, The Netherlands.

From Visual Recognition to Visual Understanding. October 11th, 2017. World Summit AI, Amsterdam, The Netherlands.

Building Image-Classification Models that are Accurate and Efficient. June 27rd, 2017. IBM T.J. Watson Research Center, Yorktown Heights NY.

Building Image-Classification Models that are Accurate and Efficient. June 23rd, 2017. ACM MobiSys (keynote), Niagara Falls NY.

The Trade-Offs of Deep-Learning Frameworks. June 5th, Semiconductor Research Company, University of Texas, Dallas TX.

Building Image-Classification Models that are Accurate and Efficient. April 28th, 2017. Big Data Meetup, New York NY.

Visualizing Data using Embeddings. March 28th, 2017. Applied Probability and Statistics Colloquium, Royal Holloway University, Egham, United Kingdom.

Understanding and Improving Convolutional Networks. March 2nd, 2017, Data Science Seminar, Leiden University, The Netherlands.

Visualizing Data using Embeddings. March 1st, 2017, Machine Learning Seminar, Linköping University, Sweden.

From Visual Recognition to Visual Reasoning. February 28th, 2017, ASCI Spring School on Computer Vision, Amsterdam, The Netherlands.

Visualizing Data using Embeddings. February 15th, 2017, Applied Math Seminar, Yale University, New Haven CT.

News Feed Ranking: Large-Scale Logistic Regression at Facebook. February 13th, 2017, Cornell Tech, New York NY.

Learning to Solve Vision without Annotating Millions of Images. October 21st, 2016, Cornell University, Ithaca NY.

Learning to Solve Vision without Annotating Millions of Images. October 10th, 2016, Fourth ECCV Workshop on Web-Scale Vision and Social Media (invited keynote talk), Amsterdam, The Netherlands.

Weakly Supervised Training of Convolutional Networks. April 25th, 2016, Princeton University, Princeton NJ.

Visualizing Data using Embeddings. April 12th, 2016, Columbia University, New York NY.

Learning to Solve Vision without Annotating Millions of Images. March 22nd, 2016, ICT-Open, Amersfoort, The Netherlands.

Deep Learning: Embeddings. February 23rd, 2016, New York University, New York NY.

Visualizing Data using Embeddings. Design@Large Talks. February 10th, 2016, University of California, San Diego CA.

News Feed Ranking: Large-Scale Logistic Regression at Facebook. September 8th, 2015, Cornell Tech, New York NY.

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.

Learning with Marginalized Corrupted Features. May 29th 2014, Deepmind, London, United Kingdom.

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, 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 140,000 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.