Tolga Tasdizen

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EDUCATION

- Ph.D. in Engineering, Brown University, Providence, RI 2001
- M.S. in Engineering, Brown University, Providence, RI 1997
- B.S. in Electrical Engineering, Bogazici University, Istanbul, Turkey 1995

WORK EXPERIENCE

- Professor, Electrical and Computer Engineering 2018 - present
  Adjunct Associate Professor, Computer Science
  University of Utah, Salt Lake City, UT
- Associate Professor, Electrical and Computer Engineering 2012 - 2018
  Adjunct Associate Professor, Computer Science
  University of Utah, Salt Lake City, UT
- Visiting Faculty, Faculty of Engineering and Natural Sciences 2014 - 2015
  Sabanci University, Istanbul, Turkey
- Assistant Professor, Electrical and Computer Engineering 2008 - 2012
  Adjunct Assistant Professor, Computer Science
  University of Utah, Salt Lake City, UT
- Research Assistant Professor, School of Computing 2004 - 2008
  University of Utah, Salt Lake City, UT
- Postdoctoral Research Scientist, Scientific Computing and Imaging Institute 2001 - 2004
  University of Utah, Salt Lake City, UT

RESEARCH INTERESTS

- Image analysis with machine learning. Segmentation, semantic labeling, classification and recognition. Semi-supervised learning and transfer learning for image analysis.
- Implicit and parametric shape models and their applications to segmentation, modeling priors, sampling and tracking. Variational methods for surface and shape processing.
- Material classification and particle segmentation from electron microscopy images. Analysis X-ray diffraction patterns.
- Neural circuit reconstruction (connectomics) from electron microscopy image stacks. Automatic methods for fast image registration of very large image mosaics. Deep learning based segmentation of electron microscopy images.

- Applications of deep learning in radiology: predicting pulmonary function from chest radiographs, using radiological reports as a supervision signal for learning.

RESEARCH GRANTS

- **Neighborhood Looking Glass: 360 Degree Automated Characterization of the Built Environment for Neighborhood Effects Research**

  Role: PI of subcontract to the University of Utah
  PI: Quynh Nguyen
  Funding Agency: NIH
  Award: $ 289,151 2018 - 22

- **Realizing Multidimensional Imaging and Machine Learning on the Scanning Transmission Electron Microscope**
  Role: PI of subcontract to the University of Utah
  PI: Jeffrey Aguiar, Idaho National Laboratory
  Funding agency: DOE
  Award: $1,117,000, 2017 - 20

- **Joint Radiology and Imaging Sciences and Scientific Computing and Imaging Institute Pilot Grants**
  Role: PI
  Funding Agency: Department of Radiology, University of Utah
  Award: $60,000, 2017 - 18

- **Machine Learning and Signature Analysis of Nuclear Forensic Data**
  Role: PI
  Funding Agency: DHS
  Award: $1,726,121, 2016 - 21

- **Multiscale Genetic Connectivity of Primate Social Circuits**
  Role: Co-Investigator
  PI: Sarang Joshi, Department of Bioengineering, University of Utah
  Funding Agency: NIH
  Award: $ 3,203,270, 2016-19

- **CAREER: Deep sparse dictionary context models and their application to image parsing and neuron tracking for connectomics**
  Role: PI
  Funding Agency: NSF
  Award: $409,406, 2012-17

- **SLASH: Scalable Large Analytic Segmentation Hybrid**
  Role: PI of subcontract to the University of Utah PI: Mark H Ellisman, UCSD
  Funding agency: NIH NINDS
  Award $1,864,741. 2011-15 (Utah subcontract $612,241)

- **Fluorender: An imaging tool for Visualization and Analysis of Confocal Data as Applied to Zebrafish Research**
  Role: Co-PI
  PI: Charles Hansen, School of Computing, University of Utah

Funding agency: NIH NIGMS
Award $1,242,833, 2011-16.

- **Multiscale Models of Melting Arctic Sea Ice**
  Role: co-Investigator PI: Kenneth Golden, Department of Mathematics, University of Utah
  Funding Agency: Office of Naval Research
  Award: $479,316. 2012-15

- **Model-based Reconstruction for Dynamic MRI**
  Role: Co-Investigator
  PI: Edward Di Bella, Department of Radiology, University of Utah
  Funding Agency: NIH
  Award: $410,668. 2007-13

- **Utah GOED TCIP: Haemoscan**
  Role: PI
  Funding Agency: State of Utah
  Award $40,000, 2012-13

- **The influence of visual context in natural image processing in the primary visual cerebral cortex**
  Role: PI
  Funding Agency: University of Utah Seed Grant
  Award: $22,500, 2011 - 2012

- **A Computational Framework for Mapping Long Range Genetic Circuits**
  Role: co-PI
  PI: Julie Korenberg
  Funding agency: NIH NINDS
  Award: $996,734. 2009-11

- **A Software Framework for Processing, Visualization, and Analysis of High-Resolution Microscopy Data**
  Role: PI
  Funding Agency: University of Utah, Technology commercialization program
  Award: $70,000. 2009-11

- **High-Dimensional, Nonparametric Density Estimation for the Analysis of Images and Shapes**
  Role: co-PI
  PI: Ross Whitaker
  Funding Agency: NSF
  Program: Mathematical Sciences: Innovations at the Interface with Computer Sciences
  Award: $474,000. 2008-11

- **Large-scale computational reconstruction of three-dimensional neural connectivity from serial-section microscopy**
  Role: PI
  Funding agency: NIH NIBIB
  Award $1,148,297. 2005-10

- **Prevention of Hemodialysis Vascular Access Stenosis**
  Role: Co-PI
  PI: Alfred Cheung, Department of Internal Medicine, University of Utah
  Funding Agency: NIH
  Award: $2,095,743. 2007-8

EQUIPMENT GRANTS

- **Acquisition of NVIDIA deep learning supercomputer**
  Role: PI
  Funding Agency: Research Instrumentation Fund, University of Utah
  Award: $93,147, 2017

HONORS AND AWARDS

- The Scientific & Technological Research Council of Turkey (TUBITAK) Fellowship for Visiting Scientists and Scientists on Sabbatical Leave, 2014
- National Science Foundation Early Career Award, 2012
- Invited commentary by A. Cardona on our paper: *E Jurrus, S Watanabe, ARC Paiva, MH Ellisman, EM Jorgensen and T Tasdizen, Semi-Automated Neuron Boundary Detection and Nonbranching Process Segmentation in Electron Microscopy Images, Neuroinformatics, 2012.*
- College of Engineering Outstanding Teacher Award, 2012
- Electrical and Computer Engineering Department Outstanding Researcher Award, 2012
- Electrical and Computer Engineering Department Outstanding Teacher Award, 2011
- Dean's letter for top instructors in the College of Engineering, Fall 2010 (Digital Image Processing)
- Dean's letter for top instructors in the College of Engineering, Spring 2010 (Engineering Probability and Statistics)
- Best paper award MICCAI 2010 MedIA special Issue
- Dean's letter for top instructors in the College of Engineering, Fall 2009 (Estimation Theory)
- Best Student Paper Award Honorable Mention, 15th IEEE Computer Society International Conf. on Pattern Recognition, 2000.

MEDIA COVERAGE

- Utah Pulse article featuring our NSF Career Award, 10/14/2012.

PATENTS

- Systems and Methods for Image Classification. Status: Pending. Type: Parent/Utility. Inventors: Tolga Tasdizen, Mojtaba Seyedhosseini. File date 02/05/2016. Assignee: The University of Utah. Country: United States.
- Microscopy Visualization (#9,104,903). Status: Issued. Type: Parent/Utility. Inventors: Steven P. Callahan, Bryan W. Jones, Greg M. Jones, Erik M. Jorgensen, Stan Kanarowski, John Schreiner, Tolga Tasdizen, Shigeki Watanabe, Joshua E. Cates. File date 03/18/2013; Issue date 08/11/2015. Assignee: The University of Utah. Country: United States.

- Methods and Systems for Segmentation of Cells for an Automated Differential Counting System. Status: Expired. Type: Provisional. Inventors: Tolga Tasdizen, Nisha Ramesh. File date 10/12/2011. Assignee: The University of Utah. Country: United States.

- Characterizing Datasets Using Sampling, Weighing, and Approximation of an Eigendecomposition (#8,412,651). Status: Issued. Type: Parent/Utility. Inventors: Antonio R.C. Paiva, Tolga Tasdizen. File date 09/03/2010; Issue date 04/02/2013. Assignee: The University of Utah. Country: United States.

- Image Pattern Recognition. Status: Nationalized PCT. Type: PCT/Provisional Priority. Inventors: Antonio R.C. Paiva, Tolga Tasdizen. File date 11/12/2009. Assignee: The University of Utah. Country: PCT.

- Robust Fingerprint Analysis Using Manifold Topology (#TXu 1-714-664). Status: Issued. Type: Copyright [CR]. Inventors: Tolga Tasdizen. File date 11/21/2008; Issue date 01/16/2009. Assignee: The University of Utah. Country: United States.

- System and Method for Image Segmentation By Solving an Inhomogenous Dirichlet Problem (#7,542,604). Status: Issued. Type: Parent/Utility. Inventors: Leo Grady, Tolga Tasdizen, Ross T. Whitaker. File date 08/17/2005; Issue date 06/02/2009. Assignee: The University of Utah. Country: United States.

INVENTION DISCLOSURES

- Intelligent Damage Classification and Estimation in Power Distribution Poles Using Unmanned Aerial Vehicles and Convolutional Neural Networks, U-6831

- Automated Chromosome Analysis (Karyotyping), U-6340

- Scene Modeling with Contextual Hierarchical Models for Biologic Image Segmentation and Labeling, U-5753

- Multi-Dimensional Data Registration, Navigation and Visualization Package, University of Utah Invention Disclosure, U-5328.

- Segmentation and Classification of Blood Cells for an Automated Differential Blood Count System, University of Utah Invention Disclosure, U-5185

- Weighted Novelty Selection for Fast Kernel and Graph Methods, University of Utah Invention Disclosure, U-4920.

- Robust Fingerprint Analysis Using Manifold Topology, University of Utah Invention Disclosure, U-4549.

- IR-Tweak, IR-Mosaic, University of Utah Invention Disclosure, U-4275.

- Implicit Surface Representations for Fluids from Particle Simulations, University of Utah Invention Disclosure, U-4128.

- An Advanced Solver for the Diffusion Equation with Spatially Varying Coefficients, University of Utah Invention Disclosure, U-3750.

PROFESSIONAL ACTIVITIES (in chronological order)

- Editorial
  - Senior Area Editor, IEEE Transactions on Image Processing, 2019 -
  - Associate Editor, IEEE Transactions on Image Processing, 2016 - 2019
  - Guest Editor, IEEE Transactions on Big Data: Special Issue on Biomedical Big Data: Understanding, Learning and Applications, 2018
  - Guest Editor, Springer Machine Vision and Applications Special Issue on Learning and Understanding of Biomedical Big Data, 2018
  - Associate Editor, ISBI 2015 - 2017
  - Associate Editor, IEEE Signal Processing Letters, 2012 - 2016
  - Associate Editor, BMC Bioinformatics, 2012 - 2014
- Technical Committee
  - IEEE Signal Processing Society, Bio imaging and Signal Processing (BISP) Technical Committee Member, 2012-2017
  - IEEE Signal Processing Society, Bio imaging and Signal Processing (BISP) Technical Committee Awards Subcommittee Member, 2012-2013
  - IEEE Signal Processing Society, Bio imaging and Signal Processing (BISP) Technical Committee Associate Member, 2009-2011
- Conference Organization
  - Program Committee, Computer Vision for Microscopy Image Analysis (CVMI), 2017-20
  - Senior Program Committee member BioImage Informatics Conference 2017
  - Program Committee SIU 2015, 2016, 2017
  - Program Committee VISAPP 2012, 2015, 2017, 2018
  - Program Committee VipIMAGE 2013
  - Track area chair and session chair 20^{th} International Conference on Pattern Recognition; *Pattern Recognition and Machine Learning Track*, 2010
  - Program Committee CompIMAGE 2010, 2012
  - Program Committee IMAGAPP 2010
  - Program Committee Microscopic Image Analysis with Applications in Biology (MIAAB) 2011
  - Program Chair, Fourth International Workshop on *Microscopic Image Analysis with Applications in Biology*, NIH Campus, Bethesda, MD, 2009.
  - Session Chair 6^{th} IEEE International Symposium on Biomedical Imaging (ISBI): From Nano to Macro; *Electron Microscopy* session, 2009.
  - Organizing committee, MICCAI 2008 Workshop: *Microscopic Image Analysis with Applications in Biology*.
  - Program committee, MICCAI 2006 Workshop: *Microscopic Image Analysis with Applications in Biology*.
  - Scientific committee, VI International Congress on Computational Bioengineering
- Funding Agency Service

  - NIH IGIS study section, February & June 2019
  - NIH Zebrafish study section, 2014.
  - NIH P41 Scientific Review Panel Member, 2012
  - NSF Robust Intelligence, Review Panel Member, 2011.
  - NSF/NIH *Collaborative Research in Computational Neuroscience* program, Review Panel Member, 2006, 2008, 2009 and 2010.

- Journal reviewing: IEEE Transactions on Image Processing, IEEE Transactions on Medical Imaging, IEEE Transactions on Pattern Analysis and Machine Intelligence, Medical Image Analysis, IEEE Transactions on Visualization and Computer Graphics, Journal of Neuroscience Methods, IEEE Reviews in Biomedical Engineering, Journal of Mathematical Imaging and Vision, Pattern Analysis and Applications, ACM Solid Modeling, SIAM Journal of Scientific Computing, VisSym, Journal of Electronic Imaging, The Visual Computer, Elsevier Methods, Pattern Recognition Letters, Neuron.
- Conference Reviewing: ISBI, MICCAI, CVPR, ICIP, ICASSP, IEEE Visualization, Eurographics, SIGGRAPH
- Other
  - Judge, Bench to Bedside Competition, 2016, 2017, Salt Lake City, UT.
  - PhD external examiner at University College London 2013
  - IEEE International Symposium on Biomedical Imaging (ISBI): From Nano to Macro, Lunch with Leaders event participant, Barcelona, 2012.
  - Imaging and Computer in the Loop breakout session speaker, Opportunities in Biology at the Extreme Scale of Computing, Chicago, 2009.

INTERNAL SERVICE

- ECE RPT subcommittee (Member), 2018 - present
- ECE Undergraduate Committee (Chair) - 2017 - 2019
- ECE Undergraduate Committee (Member), 2015 - 2016
- Undergraduate Research Opportunities Program (UROP) Review Committee (Member), 2015 - 2018
- ECE Graduate Committee (Member), 2012 - 2015
- ECE Graduation and Admissions Committee (Member), 2010 - 2015
- ECE Faculty Search Committee (Member), 2012-2014
- College Council, 2010 - 2013

MEMBERSHIPS

- Senior Member IEEE, IEEE Signal Processing Society and IEEE Computer Society

TEACHING

- *Deep Learning for Image Analysis*, Graduate level, University of Utah, Spring 2019.

- *Digital Signal Processing*, Graduate and undergraduate level, University of Utah, Spring 2016, Spring 2017, Spring 2018.
- *Pattern Recognition*, Graduate level, Electrical and Computer Engineering, University of Utah, Spring 2014.
- *Estimation Theory*, Graduate level, Electrical and Computer Engineering, University of Utah, Fall 2009, Fall 2011.
- *Engineering Probability and Statistics*, Undergraduate level, Electrical and Computer Engineering, University of Utah, Spring 2009, Spring 2010, Spring 2011, Spring 2012 and Spring 2013.
- *Digital Image Processing*, Graduate level, Electrical and Computer Engineering, University of Utah, Fall 2008, Fall 2010, Fall 2013, Fall 2015, Fall 2016, Fall 2017, Fall 2019.
- *Machine Learning*, Graduate and Undergraduate level, Computer Science, University of Utah, Spring 2006.
- *Image Analysis Seminar*, University of Utah, Fall 2015 & Spring 2016.
- *Scientific Computing and Imaging Seminar*, University of Utah, Fall 2007 & Spring 2008.

Ph.D. STUDENTS GRADUATED

- Mehran Javanmardi (2019), CS, *Learning Deep Models Under Constraints Of Annotated Data Insufficiency*
- Nisha Ramesh (2018), ECE, *Detection, Segmentation, And Tracking Of Cells In Microscopy Images*
- Fitsum Mesadi (2017), ECE, *Disjunctive Normal Shape Models For Image Segmentation And Tracking*
- Mehdi Sajjadi (2017), ECE, *Improving Accuracy Of Learning Models Using Disjunctive Normal Form And Semi-Supervised Learning*
- Ting Liu (2016), CS. *Image Segmentation with Hierarchical Models*
- Cory Jones (2016), ECE. *Connectomics: A semi-automatic approach*
- Srikant Kamesh Iyer (2016), ECE, *Improved Total Variation Reconstruction Methods for Cardiac Magnetic Resonance Imaging*
- Mojtaba Seyedhosseini (2014), ECE, *Scene Labeling with Supervised Contextual Models*
- Elizabeth Jurrus (2011), CS, *Segmentation of Neurons from Electron Microscopy Images*

M.S. STUDENTS GRADUATED

- Meenakshi Barjatia, M.S. in Electrical and Computer Engineering (2014), *Analysis and Segmentation of Arctic Melt Pond Images*.
- Nisha Ramesh, M.S. in Electrical and Computer Engineering (2012), *Segmentation and Classification of Blood Cells for an Automated Differential Blood Count System*.
- Bradley Grimm, M.S. in Computer Science (2011), *non-thesis option*.

- Kannan Umadevi Venkataraju, M.S. Computer Science (2010), *Automatic Markup of Neural Cell Membranes Using Boosted Decision Stumps*.
- Deepak Antony, M.S. in Computational Engineering and Science (2009), *non-thesis option*.
- Samuel Preston, M.S. Computer Science (2009), *Processing of MRI Data for Simulation and Monitoring of Drug Delivery*.
- Neda Sadeghi, M.S. in Computational Engineering and Science (2008), *Automatic Classification of Alzheimer's Disease and Frontotemporal Dementia: A Decision Tree Approach with FDG-PET imaging*.

CURRENT GRADUATE STUDENTS

- Abhinav Kumar, Ph.D. candidate Computer Science
- Aishwarya Gupta, Ph.D. candidate Computer Science
- Amir Nazem, Ph.D. candidate Computer Science
- Nhat-Cuong Ly, Ph.D. candidate Electrical and Computer Engineering
- Ricardo Lanfredi, Ph.D. candidate Electrical and Computer Engineering
- Mitra Alirezai, Ph.D. candidate Electrical and Computer Engineering
- Krithika Iyer, Ph.D. candidate Computer Science

POSTDOCTORAL RESEARCHERS

- Antonio R. Paiva, Ph.D. University of Florida

PAST AND CURRENT UNDERGRADUATE STUDENT PROJECTS

- Samuel Colby and Tyler Thompson, Visual feature attribution for nuclear material images, Summer 2019.
- Ada Toydemir, USC, Generating images of nuclear material with deep texture synthesis, Summer 2019.
- Andrew Radford, School of Computing, Nuclear forensics database, Summer 2018.
- Emmanuel Cardenas, Electrical and Computer Engineering, Roof structure analysis with deep learning for solar panel installation, 2018-19.
- Joshua Ong, Electrical and Computer Engineering, *Resolution matching of SEM images for nuclear material classification with convolutional networks*, 2017-18.
- Yinchen Cheng, Wangye Yin, Yuxio Huo, Electrical and Computer Engineering, *Interactive segmentation of Electron Microscopy Image Stacks*
- Jason Thummel, School of Computing, *Vesicle Detection for Electron Microscopy Images with ImageJ*
- Michael Yang, Electrical and Computer Engineering, *User Interface for Neural Circuit Reconstruction from Electron Microscopy*

PUBLICATIONS

- **Book Chapter**

1. N Ramesh and T Tasdizen, Detection and Segmentation in Microscopy Images, Elsevier.
2. T Tasdizen, SM Seyedhosseini, T Liu, C Jones and E Jurrus, Image segmentation for connectomics using machine learning, in *Computational Intelligence in Biomedical Imaging*, pp 237–278, ed. K Suzuki, Springer New York, 2014

- **Journal**

1. V Keshavarzzadeh, M Alirezai, T Tasdizen and R Kirby, Image-Based Multiresolution Topology Optimization using Deep Disjunctive Normal Shape Model, submitted to Computer-Aided Design
2. C Ly, C Vachet, I Schwerdt, E Abbott, A Brenkmann, L McDonald IV and T Tasdizen, Determining Uranium Ore Concentrates and Their Calcination Products via Image Classification of Multiple Magnifications, submitted to Journal of Nuclear Materials.
3. MM Hosseini, A Umunnakwe, M Parvania and T Tasdizen, Intelligent Damage Classification and Estimation in Power Distribution Poles Using Unmanned Aerial Vehicles and Convolutional Neural Networks, submitted to IEEE Transactions on Smart Grid.
4. M Javanmardi, D Huang, P Dwivedi, S Khanna, K Brunisholz, R Whitaker, Q Nguyen and T Tasdizen, Analyzing Associations Between Chronic Disease Prevalence and Neighborhood Quality Through Google Street View Images, submitted to IEEE Access
5. ML Gong, T Tasdizen and JA, Aguiar, Merging Chemistry and Crystallography Data for Higher Throughput Classification using Machine Learning, submitted to Computational Materials Science.
6. Z Wu, J Wei, J Wang, Q Ma, S Zhe and T Tasdizen, Double Siamese Network Based Domain Adaptation for Distant Domain Transfer Learning, under revision, Neurocomputing.
7. ML Gong, D Masiel, B Reed, B Miller, T Tasdizen, and JA Aguiar, Decoding Crystallography from High Resolution Electron Imaging and Diffraction Datasets with Deep learning, submitted to Science Advances.
8. J Wei, J Wang, Q Ma, S Zhe, T Tasdizen, Graph Constraint-Based Robust Latent Space Low-Rank and Sparse Subspace Clustering, Neural Computing and Applications, 2019. 10.1007/s00521-019-04317-3
9. A Hanson, R Lee, C Vachet, I Schwerdt, T Tasdizen, LW McDonald, Quantifying Impurity Effects on the Surface Morphology of U3O8, Analytical Chemistry, 2019. DOI 10.1021/acs.analchem.9b02013
10. E Erdil, S Yildirim, T Tasdizen and M Cetin, Pseudo-marginal MCMC Sampling for Image Segmentation using Nonparametric Shape Priors, IEEE Trans Image Processing, 28:11 pp. 5702-5715, November 2019. DOI 10.1109/TIP.2019.2922071
11. EC Abbott, A Brenkmann, C Galbraith, J Ong, IJ Schwerdt, BD Albrecht, T Tasdizen and LW McDonald, Dependence of UO_2 Surface Morphology on Synthetic Route, Radiochimica Acta, 2019. DOI 10.1515/ract-2018-3065
12. ST Heffernan, N-C Ly, BJ Mowera, C Vachet, IJ Schwerdt, LW McDonald IV, T Tasdizen, Identifying Surface Morphological Characteristics to Differentiate Between Mixtures of U3O8 Synthesized from Ammonium Diuranate and Uranyl Peroxide, Radiochimica Acta, 2019. DOI 10.1515/ract-2019-3140

13. Q Nguyen, S Khanna, P Dwivedi, D Huang, Y Huang, T Tasdizen, K Brunisholz, F Li, W Gorman, TX Nguyen and C Jiang, Using Google Street View to Examine Associations between Built Environment Characteristics and U.S. Health Outcomes, Vol 14, pp 100859, Elsevier Preventive Medicine Reports, June 2019. DOI 10.1016/j.pmedr.2019.100859
14. C Ly, I Schwerdt, A Olsen, R Porter, K Sentz, L McDonald and T Tasdizen, A New Approach for Quantifying Morphological Features of U_3O_8 for Nuclear Forensics using A Deep Learning Model, Journal of Nuclear Materials, February 2019. DOI 10.1016/j.jnucmat.2019.01.042
15. N Ramesh and T Tasdizen, Cell segmentation using multi-task learning with a convolutional neural networks, IEEE Journal of Biomedical and Health Informatics, 23:4, pp. 1457–68, July 2019. DOI 10.1109/JBHI.2018.2885544
16. IJ Schwerdt, A Brenkmann, S Martinson, BD Albrecht, S Heffernan, MR Klosterman, T Kirkham, T Tasdizen and L McDonald, Nuclear proliferomics: A new field of study to identify signatures of nuclear materials as demonstrated on alpha-UO3, Talanta, Vol 186, pp. 433-444, August 2018.
17. Q Nguyen, T Nguyen, W Yu, M Pham, M McCullough, H-W Meng, M Wen, F Li, K Smith, K Brunisholz, M Sajjadi and T Tasdizen, Neighborhood Looking Glass: 360 Degree Automated Characterization of the Built Environment for Neighborhood Effects Research, J Epidemiol Community Health. 2018 Mar;72(3):260-266. doi: 10.1136/jech-2017-209456.
18. F Mesadi, E Erdil, M Cetin and T Tasdizen, Image Segmentation Using Disjunctive Normal Appearance and Shape Priors, IEEE Trans Medical Imaging, 37:1 pp. 193-305, January 2018. DOI 0.1109/TMI.2017.2756929
19. E Erdil, M Ghani, L Rada, AO Argunsah, D Unay, T Tasdizen and M Cetin, Nonparametric Joint Shape and Feature Priors for Image Segmentation, IEEE Trans Image Processing, 26:11 pp. 5312 - 5323, July 2017. DOI 10.1109/TIP.2017.2728185
20. N Ramesh, T Liu and T Tasdizen, Cell Detection Using Extremal Regions in a Semi-Supervised Learning Framework, Journal of Healthcare Engineering, vol. 2017, Article ID 4080874, 13 pages, 2017. DOI:10.1155/2017/4080874.
21. F Mesadi, M Cetin and T Tasdizen, Disjunctive Normal Parametric Level Set With Application to Image Segmentation, IEEE Trans Image Processing, 26:6, pp. 2618 - 2631, March 2017.
22. MU Ghani, SD Kanik, AO Argunsah, A Hobbiss, I Israely, D Unay, F Mesadi, T Tasdizen and M Cetin, Dendritic Spine Classification using Shape and Appearance Features based on Two-Photon Microscopy, J Neuroscience Methods, December 2016.
23. M Sajjadi, SM Seyedhosseini and T Tasdizen, Disjunctive Normal Networks, 218(19):276-285, Neurocomputing, December 2016.
24. T Liu, SM Seyedhosseini and T Tasdizen, Image Segmentation Using Hierarchical Merge Tree, 25(10): 4596–4607, IEEE Trans Image Processing, October 2016
25. SK Iyer, T Tasdizen, N Burgon, E Kholmovski, N Marrouche, G Adluru and EVR DiBella, Compressed sending for rapid late gadolinium enhanced imaging of the left atrium: A preliminary study, Magnetic Resonance Imaging, 34(7): 846–854, 2016.
26. SK Iyer, T Tasdizen, D Likhite and EVR DiBella, Split Bregman Multicoil Accelerated Reconstruction Technique (SMART): A new framework for rapid reconstruction of cardiac perfusion MRI, Medical Physics, 43(4):1969–1981, April, 2016.
27. SM Seyedhosseini and T Tasdizen, Semantic Image Segmentation with Contextual Hierarchical Models, IEEE PAMI, 38(5):951–964, May 2016.

28. M Barjatia, T Tasdizen, B Song and KM Golden, Network Modeling of Arctic Melt Ponds, Cold Regions Science and Technology, 124:40-53, April 2016.

29. I Arganda-Carreras, SC Turaga, DR Berger, D Ciresan, A Giusti, LM Gambardella, J Schmidhuber, D Laptev, S Dwivedi, J Buhmann, T Liu, M Seyedhosseini, T Tasdizen, L Kamentsky, R Burget, V Uher, X Tan, C Sun, TD Pham, E Bas, MG Uzunbas, A Cardona, J Schindelin, HS Seung, Electron Microscopy Challenge: Crowdsourcing the creation of machine intelligence for connectomics, Frontiers in Neuroanatomy, 9:00142, November, 2015.

30. M Sajjadi, SM Seyedhosseini and T Tasdizen, Nonlinear regression with logistic product basis networks, 22:8, pp 1011–1015, IEEE Signal Processing Letters, August 2015.

31. C Jones, T Liu, NW Cohan, MH Ellisman and T Tasdizen, Efficient Semi-Automatic 3D Segmentation for Neuron Tracing in Electron Microscopy Images, J Neuroscience Methods, 246:13–21, May 2015.

32. SM Seyedhosseini, S Shushruth, T Davis, JM Ichida, PA House, B Greger, A Angelucci and T Tasdizen, Informative features of local field potential signals in primary visual cortex during natural image stimulation, J Neurophysiology 113(5):1520-32, March 2015.

33. SM Seyedhosseini and T Tasdizen, Disjunctive Normal Random Forests, Pattern Recognition 48:3, pp 976–983, March 2015.

34. AJ Perez, SM Seyedhosseini, TJ Deerinck, EA Bushong, T Tasdizen and MH Ellisman, A Workflow for the Automatic Segmentation of Organelles in Electron Microscopy Image Stacks, Frontiers in Neuroanatomy, 8:126, 2014. In e-book *Quantitative Analysis of Neuroanatomy*.

35. T Liu, C Jones, SM Seyedhosseini and T Tasdizen, A Modular Hierarchical Approach to 3D Electron Microscopy Image Segmentation, J Neuroscience Methods, 226, pp. 88-102, 2014.

36. SM Seyedhosseini, MH Ellisman and T Tasdizen, Multi-Class Multi-Scale Series Contextual Model for Image Segmentation, IEEE Trans Image Processing, 22:11 pp. 4486–4496, November 2013.

37. E Jurrus, S Watanabe, ARC Paiva, MH Ellisman, EM Jorgensen and T Tasdizen, Semi-Automated Neuron Boundary Detection and Nonbranching Process Segmentation in Electron Microscopy Images, Neuroinformatics. 2013 Jan;11(1):5-29

38. ARC Paiva and T Tasdizen, Fingerprint Image Segmentation using Data Manifold Characteristic Features, International Journal of Pattern Recognition and Artificial Intelligence, 26:4, pp 12560, 2012.

39. L Hogrebe, ARC Paiva, E Jurrus, C Christensen, M Bridge, JR Korenberg, PR Hof, B Roysam, T Tasdizen, Serial Section Registration of Axonal Confocal Microscopy Datasets for Long Range Neural Circuit Reconstruction, Journal of Neuroscience Methods 207, pp. 200-210, June 2012.

40. N Ramesh, BJ Dangott, M Salama and T Tasdizen, Segmentation and Two-Step Classification of White Blood Cells in Peripheral Blood Smear, Journal of Pathology Informatics 3:13, 2012.

41. SK Iyer, T.Tasdizen and EVR DiBella, Edge Enhanced Spatio-Temporal Constrained Reconstruction of Undersampled Dynamic Contrast Enhanced Radial MRI, Magnetic Resonance Imaging 30, pp. 610-619, 2012

42. ML Berlanga, S Phan, EA Bushong, S Lamont, S Wu, O Kwon, BS Phung, M Terada, T Tasdizen, E Martone and MH Ellisman, Three-dimensional reconstruction of serial mouse brain sections using high-resolution large-scale mosaics, Frontiers in Neuroscience Methods, Vol 5, March 2011.

43. JR Anderson, BW Jones, CB Watt, MV Shaw, J.-H Yang, D DeMill, JS Lauritzen, Y Lin, KD Rapp, D Mastonarde, P Koshevoy, B Grimm, T Tasdizen, RT Whitaker and RE Marc, Exploring the Retinal Connectome, Molecular Vision, 17:355-379, February 2011.
44. JR Anderson, BC Grimm, S Mohammed, BW Jones, T Tasdizen, J Spaltenstein, P Koshevoy, RT Whitaker and RE Marc, The Viking Viewer: Scalable Multiuser Annotation and Summarization of Large Volume Datasets, Journal of Microscopy, 241(1), pp. 13-28, January 2011.
45. E Jurrus and ARC Paiva, S Watanabe, JR Anderson, BW Jones, RT Whitaker, EM Jorgensen, RE Marc and T Tasdizen, Detection of Neuron Membranes in Electron Microscopy Images using Auto-context, Medical Image Analysis, 14:6, pp. 770-783, December 2010
46. G Adluru, T Tasdizen, M Schabel and EVR DiBella, Reconstruction of 3D Dynamic Contrast Enhanced MRI using Non-Local Means, Journal of Magnetic Resonance Imaging, 32(5), pp. 1217-27, November 2010
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- **Abstracts and Other Publications**

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