Brian Matejek

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EDUCATION

Harvard University, Cambridge, Massachusetts, USA

Ph.D. Candidate in Computer Science — Aug 2016 – Present
Focus: connectomics, computer vision, neuroscience
Advisor: Hanspeter Pfister
GPA: 4.00 / 4.00

Princeton University, Princeton, New Jersey, USA

M.S.E. in Computer Science — Sep 2014 – Jun 2016
Thesis: Learning Global Features for Neuron Reconstruction in EM Images
Advisor: Thomas Funkhouser
GPA: 3.85 / 4.00

B.S.E. in Computer Science — Sep 2010 – Jun 2014
Independent Research: Detecting Objects Using Google Street View Data
Independent Research: A Computational Analysis of Arbitrage Opportunities in Sports Gambling
GPA: 3.79 / 4.00, High Honors

PUBLICATIONS

[10] **B. Matejek**†, T. Franzmeyer†, D. Wei, X. Wang, J. Zhao, K. Palágyi, J.W. Lichtman, and H. Pfister. Scalable Biologically-Aware SkeletonGeneration for Connectomic Volumes. *Under review.*

[9] Z. Lin, D. Wei, W.D. Jang, S. Zhou, X. Chen, X. Wang, R. Schalek, D. Berger, **B. Matejek**, L. Kamentsky, A. Suissa-Peleg, D. Haehn, T. Jones, T. Parag, J.W. Lichtman, and H. Pfister. Two-Stream Active Query Suggestion for Large-Scale Object Detection in Connectomics. In *Proceedings of European Conference on Computer Vision (ECCV)*, August, 2020.

[8] **B. Matejek**, D. Wei, X. Wang, J. Zhao, K. Palágyi, and H. Pfister. Synapse-Aware Skeleton Generation for Neural Circuits. In *Springer: International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, October, 2019.

[7] **B. Matejek**, D. Haehn, H. Zhu, D. Wei, T. Parag, and H. Pfister. Biologically-Constrained Graphs for Global Connectomics Reconstruction. In *Proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June, 2019.

[6] K. Dmitriev, T. Parag, **B. Matejek**, A. Kaufman, and H. Pfister. Efficient Correction for EM Connectomics with Skeletal Representation. In *British Machine Vision Conferemce (BMVC)*, September, 2018.

[5] M. Behrisch, D. Streeb, F. Stoffel, D. Seebacher, **B. Matejek**, S. Hagen Weber, S. Mittelstädt, H. Pfister, and D. Keim. Commercial Visual Analytics Systems - Advances in the Big Data Analytics Field. In *IEEE Transactions on Visualization and Computer Graphics (TVCG)*, July, 2018.

[4] **B. Matejek**, D. Haehn, F. Lekschas, M. Mitzenmacher, and H. Pfister. Compresso: Efficient Compression of Segmentation Data For Connectomics. In *Springer: International Conference on Medical Image Computing and Computer-Assisted Intervention* (MICCAI), September, 2017.

[3] D. Haehn, J. Hoffer, **B. Matejek**, A. Suissa-Peleg, A. Al-Awami, L. Kamentsky, F. Gonda, E. Meng, W. Zhang, R. Schalek, A. Wilson, T. Parag, J. Beyer, V. Kaynig, T. Jones, J. Tompkin, M. Hadwiger, J.W. Lichtman, and H. Pfister. Scalable Interactive Visualization for Connectomics. In *MDPI Informatics*, August, 2017.

[2] T. Parag, F. Tschopp, W. Grisaitis, S.C. Turaga, X. Zhang, **B. Matejek**, L. Kamentsky, J.W. Lichtman, and H. Pfister. Anisotropic EM Segmentation by 3D Affinity Learning and Agglomeration. *arXiv preprint arXiv:1707.08935*, July, 2017.

[1] D. Dohan, **B. Matejek**, and T. Funkhouser. Learning hierarchical semantic segmentations of lidar data. In *IEEE International Conference of 3D Vision*, October, 2015.

INVITED TALKS

Efficient Error Correction for Connectomics, Bioimage Computing — Jun 2019

AWARDS & SCHOLARSHIPS

Smith Family Fellowship — Jul 2017 – Jun 2018
Tess Denny Chen Graduate Student Research Fellowship — Aug 2016 – Jun 2017
Member of Sigma Xi, Scientific Research Society — Admitted Jun 2014
Member of Tau Beta Pi, Engineering Honor Society — Admitted Nov 2012

TEACHING EXPERIENCE

Harvard University
Computer Science 109A: Introduction to Data Science — Fall 2018

Princeton University
Computer Science 423: Theory of Algorithms — Spring 2016
Computer Science 402: Artificial Intelligence — Fall 2015
Computer Science 340: Reasoning About Computation — Spring 2015
Computer Science 429: Computer Vision — Fall 2014

MENTORED STUDENTS

Simon Warchol, Harvard University — Summer 2020
Ke Li, Chinese Academy of Sciences — Summer 2020
Tim Franzmeyer, ETH Zurich — Fall 2019 – Spring 2020
Ian Svetkey, Harvard University — Summer 2019
Antoine Alleon, École Polytechnique Fédérale de Lausanne (EPFL) — Spring 2019 – Summer 2019
Romil Sirohi, Harvard University — Spring 2019
Bruno Mlodozeniec, University of Cambridge — Summer 2018

PROFESSIONAL SERVICE

Reviewer
PLOS Computational Biology
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
IEEE European Conference on Computer Vision (ECCV)
ISCB Conference on Intelligent Systems for Molecular Biology (ISMB)
ACM Transactions on Graphics (SIGGRAPH)

SKILLS

Languages: Python, C++, MATLAB, Java, JavaScript, Julia, HTML, C
Other Tools: Cython, Keras, LaTex, CSS, Django