Matheus Gadelha

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EDUCATION

University of Massachusetts - Amherst, Amherst, MA
Ph.D., Computer Science, 2015 - 2021

Federal University of Rio Grande do Norte, Natal, RN, Brazil
B.Sc., *M.Sc.* Computer Science, 2008 - 2014

RESEARCH EXPERIENCE

Adobe Research
Research Scientist, 2021 - present.

Google Perception
Research Intern and Student Researcher, Summer 2020 - Spring 2021

Adobe Research
Research Scientist Intern, Summer 2019

Amazon Web Services
Applied Scientist Intern, Summer 2018

CICS, University of Massachusetts - Amherst
Research Assistant, Fall 2015 - 2021
Deep Learning for 3D Computer Vision.

DIMAp, Federal University of Rio Grande do Norte
Research Assistant, 2012 - 2014
Keypoint descriptors; realistic augmented reality

TEACHING EXPERIENCE

Teaching Assistant University of Massachusetts Amherst
Amherst, MA
Spring 2018 - Undergraduate Computer Vision
Fall 2018 - Graduate Computer Vision
Spring 2019 - Introduction to Computer Graphics

Temporary Lecturer Federal University of Rio Grande do Norte
Natal, RN, Brazil 2014 - 2015
Introduction to Algorithms and Numerical Analysis

PAPERS

1. *Generative Rendering: Controllable 4D-Guided Video Generation with 2D Diffusion Models* Shengqu Cai, Duygu Ceylan, **Matheus Gadelha**, Chun-Hao Huang, Tuanfeng Y. Wang, Gordon Wetzstein. ArXiv pre-print, 2023
2. *Diffusion Handles: Enabling 3D Edits for Diffusion Models by Lifting Activations to 3D.* Karran Pandey, Paul Guerrero, **Matheus Gadelha**, Yannick Hold-Geoffroy, Karan Singh, Niloy Mitra. ArXiv pre-print, 2023.
3. *3DMiner: Discovering Shapes from Large-Scale Unannotated Image Datasets* Ta-Ying Cheng, **Matheus Gadelha**, Soren Pirk, Thibault Groueix, Radomir Mech, Andrew Markham, Niki Trigoni. International Conference on Computer Vision (ICCV), 2023.
4. *ANISE: Assembly-based Neural Implicit Surface rEconstruction.* Dmitry Petrov, **Matheus Gadelha**, Radomir Mech, Evangelos Kalogerakis. Transactions on Visualization and Computer Graphics (TVCG), 2023, conditionally accepted.
5. *Recovering Detail in 3D Shapes Using Disparity Maps.* Marissa Ramirez de Chanlatte, **Matheus Gadelha**, Thibault Groueix, Radomir Mech. European Conference on Computer Vision (ECCV) Workshop - Learning to Generate 3D Shapes and Scenes, 2022.
6. *PrimFit: Learning to Fit Primitives Improves Few Shot Learning on Point Clouds.* Gopal Sharma, Bidya Dash, **Matheus Gadelha**, Aruni RoyChowdhury, Marios Loizou, Evangelos Kalogerakis, Liangliang Cao, Erik Learned-Miller, Rui Wang and Subhransu Maji. Symposium on Geometry Processing (SGP), 2022
7. *PlanarRecon: Real-time 3D Plane Detection and Reconstruction from Posed-Monocular Videos.* Yiming Xie, **Matheus Gadelha**, Fengting Yang, Xiaowei Zhou, Huaizu Jiang. Computer Vision and Pattern Recognition (CVPR), 2022
8. *Trace Match & Merge: Long-Term Field-Of-View Prediction for AR Applications.* Adam Viola*, Sahil Sharma*,Pankaj Bishnoi*, **Matheus Gadelha**, Stefano Petrangeli, Haoliang Wang, Viswanathan Swaminathan. **Best paper candidate**. IEEE AIVR, 2021.
9. *Deep Manifold Prior.* **Matheus Gadelha**, Rui Wang, Subhransu Maji. **Best poster honorable mention at NECV**. arXiv: 2004.04242.
10. *Label-Efficient Learning on Point Clouds using Approximate Convex Decompositions.* **Matheus Gadelha***, Aruni RoyChowdhury*, Gopal Sharma, Evangelos Kalogerakis, Liangliang Cao, Erik Learned-Miller, Rui Wang, Subhransu Maji. European Conference on Computer Vision (ECCV), 2020.
11. *Learning Generative Models of Shape Handles.* **Matheus Gadelha**, Giorgio Gori, Duygu Ceylan, Radomir Mech, Nathan Carr, Tamy Boubekeur, Subhransu Maji, Rui Wang. Computer Vision and Pattern Recognition (CVPR) 2020.
12. *Inferring 3D Shapes from Image Collections using Adversarial Networks.* **Matheus Gadelha**, Aartika Rai, Subhransu Maji, Rui Wang. International Journal of Computer Vision (IJCV).
13. *Shape Reconstruction using Differentiable Projections and Deep Priors.* **Matheus Gadelha**, Rui Wang, Subhransu Maji. International Conference on Computer Vision (ICCV), 2019.
14. *A Bayesian Perspective on the Deep ImagePrior.* Zezhou Cheng, **Matheus Gadelha**, Daniel Sheldon, Subhransu Maji. **Best poster at NECV**. Computer Vision and Pattern Recognition (CVPR), 2019.
15. *Multiresolution Tree Networks for 3D Point Cloud Processing.* **Matheus Gadelha**, Rui Wang, Subhransu Maji. European Conference on Computer Vision (ECCV), 2018.

16. *A Deeper Look at 3D Shape Classifiers.* Jong Chyi-Su **Matheus Gadelha**, Rui Wang, Subhransu Maji. Second Workshop on 3D Reconstruction Meets Semantics (ECCV), 2018.
17. *Unsupervised 3D Shape Induction from 2D Views of Multiple Objects.* **Matheus Gadelha**, Subhransu Maji, Rui Wang. International Conference on 3D Vision (3DV), 2017.
18. *3D Shape Reconstruction from Sketches via Multi-view Convolutional Networks.* Zhaoliang Lun, **Matheus Gadelha**, Evangelos Kalogerakis, Subhransu Maji, Rui Wang. International Conference on 3D Vision (3DV - *Oral*), 2017.
19. *Shape Generation using Spatially Partitioned Point Clouds.* **Matheus Gadelha**, Subhransu Maji, Rui Wang. 28th British Machine Vision Conference (BMVC), London, Great Britain, 2017.
20. *DRINK: Discrete Robust INvariant Keypoints.* **Matheus Gadelha**, Bruno Motta. International Conference on Pattern Recognition (ICPR), 2014.

SERVICE

Area Chair at WACV 2024
Reviewer for ICCV 2019, 2021, 2023
Reviewer for CVPR 2018, 2019, 2020, 2021, 2022, 2023
Reviewer for LatinX Workshop at CVPR, 2022
Reviewer for TPAMI 2018, 2021, 2023
Reviewer for ECCV 2018, 2020, 2022
Reviewer for Computer and Graphics Journal 2018
Reviewer for SIGGRAPH 2023
Reviewer for SIGGRAPH Asia 2018, 2022
Reviewer for Pacific Graphics 2019
Reviewer for Computer Graphics and Applications 2021, 2022
Reviewer for IJCV 2022

Graduate Student Representative at CICS – UMass Amherst, 2019-2020