Daniel Meister

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Education

The Czech Technical University in Prague	PRAGUE, CZECH REPUBLIC
Ph.D. in Information Science and Computer Engineering	*2014 – 2018*
M.Sc. in Computer Graphics and Interaction	*2012 – 2014*
B.Sc. in Software Engineering	*2009 – 2012*

Work Experience

Senior Software Engineer, AMD Japan Co. Ltd.	2021/9 – PRESENT
Postdoctoral Researcher, The University of Tokyo	2019/9 – 2021/8
Researcher, Czech Technical University in Prague	2017/11 – 2019/8
External Developer (Interactive Rendering System), Škoda Auto	2014/10 – 2017/3

Computer Skills

C/C++, CUDA, HIP, OpenCL, OpenGL, OptiX, Embree, Matlab, Python, PyTorch, Bash, Git, CMake, LaTeX

Research Interests

Data Structures for Ray Tracing, Real-Time Ray Tracing, GPGPU, Parallel Computing, Global Illumination, Machine Learning for Rendering

Languages

Czech (*native language*), English (*fluent*), Japanese (*pre-advanced - JLPT N2*), French (*basic knowledge*) and Spanish (*basic knowledge*)

Professional Visits Abroad

National Institute of Informatics, Japan (5 months)	2017
Vienna University of Technology, Austria (1 month)	2014

Teaching

CTU Algorithms of Computer Graphics (English)	2018
CTU Algorithms of Computer Graphics (Czech)	2015

Awards

JSPS Postdoctoral Fellowship (standard)	2019
Finalist of Antonín Svoboda Award for the Best Ph.D. Thesis	2019
Dean's Award (Outstanding Dissertation, Doctoral course)	2019

Professional Society Membership

Upsilon Pi Epsilon Honor Society

Reviewer

Eurographics, Pacific Graphics, High-Performance Graphics, Graphical Models, IEEE Computer Graphics and Applications, Journal of Computer Graphics Techniques

Publications

Daniel Meister and Jiří Bittner. Performance Comparison of Bounding Volume Hierarchies for GPU Ray Tracing. *Journal of Computer Graphics Techniques (JCGT)*, 2022

Daniel Meister and Toshiya Hachisuka. Lightweight Multidimensional Adaptive Sampling for GPU Ray Tracing. *Journal of Computer Graphics Techniques (JCGT)*, 11(3):46–64, 2022

Sabyasachi Mukherjee, Sayan Mukherjee, Binh-Son Hua, Nobuyuki Umetani, and Daniel Meister. Neural Sequence Transformation. *Computer Graphics Forum (Proceedings of Pacific Graphics)*, 2021

Daniel Meister, Adam Pospíšil, Imari Sato, and Jiří Bittner. Spatio-Temporal BRDF: Modeling and Synthesis. *Computers and Graphics*, 97:279–291, 2021

Daniel Meister, Shinji Ogaki, Carsten Benthin, Michael J. Doyle, Michael Guthe, and Jiří Bittner. A Survey on Bounding Volume Hierarchies for Ray Tracing. *Computer Graphics Forum (Proceedings of Eurographics)*, 40(2), 2021

Daniel Meister, Jakub Bokšanský, Michael Guthe, and Jiří Bittner. On Ray Reordering Techniques for Faster GPU Ray Tracing. In *Proceedings of Symposium on Interactive 3D Graphics and Games*, 2020

Jakub Hendrich, Adam Pospíšil, Daniel Meister, and Jiří Bittner. Ray Classification for Accelerated BVH Traversal. *Computer Graphics Forum (Proceedings of EGSR)*, 38(4):49–56, 2019

Daniel Meister and Jiří Bittner. Parallel Reinsertion for Bounding Volume Hierarchy Optimization. *Computer Graphics Forum (Proceedings of Eurographics)*, 37(2):463–473, 2018

Daniel Meister and Jiří Bittner. Parallel Locally-Ordered Clustering for Bounding Volume Hierarchy Construction. *IEEE Transactions on Visualization and Computer Graphics*, 24(3):1345–1353, 2018

Jakub Hendrich, Daniel Meister, and Jiří Bittner. Parallel BVH Construction Using Progressive Hierarchical Refinement. *Computer Graphics Forum (Proceedings of Eurographics)*, 36(2):487–494, 2017

Daniel Meister and Jiří Bittner. Parallel BVH Construction Using k-means Clustering. *Visual Computer (Proceedings of Computer Graphics International)*, 32(6-8):977–987, 2016

Jiří Bittner and Daniel Meister. T-SAH: Animation Optimized Bounding Volume Hierarchies. *Computer Graphics Forum (Proceedings of Eurographics)*, 34(2):527–536, 2015

Invited Talks

Bounding Volume Hierarchies for Ray Tracing, Huawei Tokyo Research Center　　　　5/2020