Morteza Mostajab

computer graphics and visualization fan and researcher

Education

2012–2016 **Master of computer science**, *Technische Universität München*, Munich.
Specialization: Computer graphics and visualization

2006–2011 **Bacholer of computer engineering**, *Hamedan University of Technology*, Hamedan,
Iran, Major: Computer hardware engineering.

2005–2006 **Pre-university**, *National Organization for Development of Exceptional Talents'
Shahid Beheshti School*, Borujerd, Iran.
Major: Mathematics and physics

2002–2005 **High school**, *National Organization for Development of Exceptional Talents' Shahid
Beheshti School*, Borujerd, Iran.
Major: Mathematics and physics

Research Interests

Rendering Techniques (Ray tracing and Rasterization)

Virtual Reality

SciVis Techniques

Computer Graphics and Visualization

Object Oriented Programming (OOP)

Publications

2016 **Real-time Stream Surface Computation and Rendering**, *Master Thesis*.
Supervisor: Prof.Dr. Westermann
Advisors: Dr. Andreas Dietrich, Dr. Frank Michel

2011 **Incorporating affective state of players in video games**, *Bachelor Thesis*.
Supervisor: Dr. Muharram Mansoorizadeh

Employment

2016–Present **Researcher**, *Fraunhofer IGD*, Darmstadt.
Research Area: Rendering Techniques, and Query-Based Visualization
Projects:
- VELaSSco (Visualization For Extremely Large-Scale Scientific Computing) EC project development (VELaSSco.eu).

Experience

2014–2016 **Student Job**, *Fraunhofer IGD*, Darmstadt.
Computer graphics research and developments.
Detailed achievements:
- participating in VELaSSCo EC project development;
- Higher-order primitive ray-tracer implemented in Intel Embree and NVIDIA OptiX.
- Virtual reality development with LEAP Motion and Oculus SDK.

2014–2014 **Research Assistant**, *TUM's TUM's Foerdertechnik Materialfluss Logistik (FML) group*, Garching bei München.
Detailed achievements:
- Working on 3D-Visualization of electromagnetic field strength distribution.

2013–2014 **Guided Research**, *TUM's Prof. Westermann's chair (Computer Graphics and Visualization)*, Garching bei München.
Topic: Measuring and Evaluating Impact of Ray Sorting Algorithms on Coherency of SIMDs in Voxel-Based Path Tracers

2013–2014 **Research Assistant**, *TUM's Prof. Navab's chair (Computer Aided and Medical Procedures & Augmented Reality)*, Garching bei München.
Detailed achievements:
- Working on OpenGL debugging tools.
- Implemnting advanced ray caster for volume rendering of medical data.

2013–2013 **Practical Course**, *TUM's Prof. Cremers's chair (Computer Vision)*, Garching bei München.
Topic:**GPU Programming in Computer Vision**. Implementing optical flow and super resolution algorithms on GPU using CUDA.

2012–2013 **Student Job**, *Developer at MetaIO GMbH*, München.
Detailed achievements:
- Developing different Metaio's Junaio browser channels using HTML5, JavaScript, PHP, and MetaIO creator.
- Developing a hair-coloring C++ module using Metaio SDK.
- Participating into development of a game using Unity.
- 3D content creation and adjustments for mobile AR scenarios using 3D Studio Max.

2012–2013 **Practical Course**, *TUM's Prof. Westermann's chair (Computer Graphics and Visualization)*, Garching bei München.
Topic:**Interactive Visual Data Analysis** by using Direct3D 11 and C++.

2012–2012 **Student Job**, *Developer at Fortiss GMbH*, München.
Detailed achievements:
- Implementing an interface using windows message passing API to update the automotive system visualization in Ciros studio.

Teaching

2016   **Seminar Course Supervision**, *Technische Universitaet Darmstadt*, Germany.
Topics:
- Apex Point Map for Constant-Time Bounding Plane Approximation by Laine, Samuli. Karras, Tero.
- SIMD Parallel Ray Tracing of Homogeneous Polyhedral Grids by Rathke, Brad; Wald, Ingo; Chiu, Kenneth; Brownlee, Carson.

2008–2010   **Teacher Assistant**, *Hamedan University of Technology*, Hamedan, Iran.
Detailed achievements:
- Teaching assistant, B.S. Introduction to Programming, M.Sc. Hassan Bashiri, spring 2008.
- Teaching assistant, B.S. Advanced Programming, M.Sc. Hassan Bashiri, autumn 2008.
- Teaching assistant, B.S. Introduction to Assembly 80x86 Programming, M.Sc. Hatam Abdoli, spring 2009.
- Teaching assistant, B.S. Data Structures, Dr. Mir Hossein Dezfoulian, autumn 2009.
- Teaching assistant, B.S. Operating Systems, Dr. Muharram Mansoorizadeh, spring 2010.
- Teaching assistant, B.S. Computer Graphics, Dr. Mir Hossein Dezfoulian, autumn 2010.

Honors, Awards, Fellowships

- Winning TUM's Scholarship for International Students in Summer 2013, Winter 2013-14, and Summer 2015.
- 1st Place (2009 and 2010), 2nd Place (2007) in Local Hamedan, Iran ACM Programming Contests

Languages

English   TOEFL iBT Score(2011): 85 (Reading: 25, Listening: 19, Speaking: 17, Writing: 24)

Persian   Mother Language
German   Elementary

Computer skills

Advanced in using   C/C++, CMake, OpenGL, OpenCL, GLSL shader programming, Qt, Ray tracing libraries (NVIDIA Optix, Intel Embree)

Love to use   Latex, Git, and Linux

Familiar with   Vulkan, DirectX and HLSL shader programming, CUDA programming, 3D object modeling and animation using 3D Studio Max.

References

- **Prof. Dr. Ruediger Westermann**
  Homepage: http://wwwcg.in.tum.de/group/persons/westermann.html
  E-mail: westermann@tum.de

- **Dr. Andreas Dietrich**
  E-mail: andi.dietrich@googlemail.com