

PETER LU | RESUME



- » Status: PhD candidate in Graphics / GIS Engineer
- » Skills: C++, Python, WebGL/OpenGL, CUDA, GLSL, Unreal Engine
- » Hobbies: research, ~~running~~, traveling, music

» » » Summary

Computer graphics researcher and software engineer with over 15 years of experience in 3D geospatial visualization and large-scale software systems. Currently pursuing a PhD at TU Delft, focusing on real-time rendering, material appearance, texture filtering, global illumination, and perceptual aspects of computer graphics. Before my PhD, I worked at SuperMap R&D in China on large-scale 3D GIS and Virtual Earth systems, including geospatial data processing, visualization, real-time rendering, and performance optimization. I have extensive experience with C++ and enjoy working on technically challenging problems at the intersection of graphics, visualization, and software engineering.

» » » Education

'22/06 - now	PhD Candidate	TU Delft
	» Research: Real-time rendering, material appearance, texture filtering, global illumination, and perceptual aspects of computer graphics. » Project VR Renovate: Applying real-time rendering techniques in Unreal Engine (C++) to support high-quality visualization of sustainable building renovations. » Teaching Assistant: Applied Image Processing and 3D Visualization.	
2018 - 2020	MSc in Computer Science, Game and Media Technology	Utrecht University
	» Master Thesis: "Gradient-Domain Volume Rendering" » GPA: 8.73/10 (Cum Laude)	
2002 - 2006	BSc in Information Systems	Beijing Forestry University

» » » EXPERIENCE

2006 - 2022	Technical Leader	SuperMap R&D, China
	» Started as a software engineer and progressed to a technical leadership role, working on 3D GIS, Virtual Earth, real-time visualization, 2D mapping, and large-scale geospatial systems. » 3D Geospatial Systems: Worked on large-scale Virtual Earth and 3D GIS systems, with a focus on geospatial data processing, visualization, and real-time rendering. » Software Architecture & Performance: Designed and developed data processing pipelines and multi-threaded systems for large geospatial datasets, with work on LOD, memory management, and performance optimization. Contributed to a cross-platform 2D map rendering system for Windows, Linux/Unix/Android, and iOS. » 3D Geospatial Standards: Contributed to the development of the <i>Data Format for Spatial 3D Model</i> (T/CAGIS 1-2019), including technical specifications for 3D geospatial data.	

» » » PUBLICATIONS

- **Guowei Lu**, Christoph Peters, Petr Kellnhofer, Elmar Eisemann. Iterative Lightmap Updates for Scene Editing. *Pacific Graphics*, 2025.
- **Guowei Lu**, Jerry Guo, Petr Kellnhofer, Elmar Eisemann. Sheared Polygonal Texture Filtering. Best student paper in *Graphics Interface*, 2024.
- **Guowei Lu**. Gradient-Domain Volume Rendering. Master Thesis at *Utrecht University*, 2020.

»»» HONORS & AWARDS

2024	Michael A. J. Sweeney Award	Graphics Interface
	» Awarded for Best Student Paper for the research on "Sheared Polygonal Texture Filtering".	
2021	Industry Standard Co-Author	T/CAGIS 1-2019
	» Key contributor to the 'Data format for spatial 3D model', establishing industry-wide technical specifications for 3D geospatial data.	
2008 / 2016	Innovation Award	SuperMap R&D
	» Awarded twice for outstanding technical breakthroughs and R&D team.	

»»» PROJECTS

2017	CesiumJS Visualization Suite	JS, WebGL
	» Developed open-source tutorials and a high-performance demo gallery for CesiumJS 3D mapping.	

**For all projects, please visit my project portfolio.*