

# 陆国伟

13350878871 • [peter6.lu@gmail.com](mailto:peter6.lu@gmail.com) • [Github](#) • 出生: 1983

## 简介

本人有多年的 GIS 研发经验，对图形学有浓厚的兴趣，主要涉及基于物理的渲染 (Physically based rendering)，三维 GIS，虚拟地球 (Virtual earth) 和可微分渲染 (Differentiable rendering) 等领域。

## 工作经历

- 工程师/部门经理, 研发中心---北京超图软件, 北京/成都 2006 年 7 月 - 2018 年 7 月
- 虚拟地球: 负责 WebGL 新产品研发, 包括全球影像与地形, 模型等模块的预研, 跨产品团队的协调合作, 个人实现了海量 3D 数据 (倾斜摄影, 点云, BIM) 的生成, Web 端 (实例化) 渲染和动态数据可视化等功能
  - 制图模块: 负责二维地图模块, 针对矢量, 栅格等多源数据的跨平台 (Windows, Linux, Android, Unix) 渲染, 以及专题图, 符号等渲染风格的实现

## 教育经历

- Utrecht University, the Netherlands 2018 年 9 月 - 2020 年 8 月
- 硕士 计算机科学---游戏与多媒体专业
- 主要课程: Advanced Graphics, Optimization and Vectorization, Game Physics, Computer Vision, Geometric Algorithm 等
  - 硕士论文: 'Gradient-Domain Volume Rendering' (分数: 8.5/10)
  - GPA: 8.73/10
- 北京林业大学 2002 年 9 月 - 2006 年 6 月
- 本科 信息管理与信息系统
- 主要课程: C/C++, 操作系统, 数据库, 计算机组成原理, 计算机图形学
  - 毕业论文: 小型数字图像处理系统 (分数: B)
  - GPA: 8/10

## 项目经历

- [双向路径追踪渲染引擎](#) • C++, CUDA • 2019
- 基于 CUDA 和 wavefront 框架的双向路径追踪渲染引擎. #Optix, wavefront
- [流体模拟](#) • C++, Compute shader • 2019
- 基于位置的流体模拟. #碰撞, 刚体, 布料
- [人体行为识别](#) • Python, Keras, tensorflow • 2019
- 训练神经网络识别人体行为 #Stanford-40 dataset, 数据增强, 迁移学习
- [Cesium 教程](#) & [示例](#) • JS, WebGL • 2017
- Cesium 教程以及范例集. #MapBox 矢量切片, ESRI 高度图, 动态数据可视化
- [\\*更多内容请访问项目集](#)



## 主要成就

- 优秀毕业生 (Cum Laude) 2020
- 企业创新奖 (团队) 2016/2008
- 全国高中数学联赛山东省一等奖, 全国三等奖 2001

## 其他

- 编程语言 C++, JS, Python, CUDA, WebGL
- 语言 英语(中等, 雅思 7), 普通话
- 兴趣 技术写作 (公众号 LET0-0) 跑步

# GUOWEI (Peter) LU

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## PROFILE

I have many years of experience in GIS research and development, and have a strong interest in graphics, mainly related to the fields of physically based rendering, 3D GIS, virtual earth, and differentiable rendering.

## EMPLOYMENT

Engineer/Department manager, R&D Department, SuperMap, Beijing/Chengdu, China Jul. 2006 - Jun. 2018

- Virtual Earth: I am responsible for the development of new WebGL products, including the pre-research of global imaging and terrain, models and other modules, the coordination and cooperation of cross-product teams, I personally realized the generation of massive 3D data (oblique photography, point cloud, BIM), and the (instanced)rendering and dynamic data visualization in the Browser.
- Map Module: I am responsible for the 2D map module, including rendering for vector, raster, and other multi-source data in cross-platform (Windows, Linux, Android, Unix), and the realization of rendering styles such as thematic maps and symbols

## EDUCATION

**Utrecht University, the Netherlands** Sep. 2018 – Sep.2020

M.Sc. in Computer Science, Game and Media

- Courses: Advanced Graphics, Optimization and Vectorization, Game Physics, Computer Vision, Geometric Algorithm, Motion and Manipulation, Crowd Simulation
- Master Thesis: 'Gradient-Domain Volume Rendering'(grade: 8.5/10)
- GPA: 8.73/10

**Beijing Forestry University, China**

Sep. 2002 - Jun. 2006

B.Sc. in Information Management & Information System

- Courses: C/C++, Data Structure, Operating Systems, Database, Computer Graphics
- Bachelor Thesis: 'Development of small digital image processing software package'(grade: B)
- GPA: 8/10

## PROJECTS

**SBDPT** • C++, CUDA • 2019

A streaming bidirectional path tracing rendering system. **#Optix, wavefront.**

**Fluid Simulation** • C++, Compute shader • 2019

Position Based Fluid Simulation. **#collision, rigid body, clothes.**

**Action Recognition** • Python, Keras, tensorflow • 2019

A CNN architecture to classify human actions **#Stanford-40 dataset, data augmentation, transfer learning.**

**Cesium tutorial(Chinese) & Demos** • JS, WebGL • 2017

Cesium tutorials written in Chinese and a gallery of Cesium demos. **#MapBox vector tile, ESRI height map terrain, dynamic data visualization.**

*\*For all projects, please visit my [project portfolio](#).*



## ACHIEVEMENTS

Graduation with Cum Laude

2020

Innovation Award (Company, team)

2016/2008

National High School Mathematics League, National 3<sup>rd</sup> prize, Provincial 1<sup>st</sup> prize

2001

## MISCELLANEOUS

**Programming Language**

C++, JS, Python, CUDA, WebGL

**Oral & Written**

English(medium, IELTS 7), Mandarin(Native)

**Hobbies**

Technical writing, running