Alisa Jung

alisajung.github.io

Education

Karlsruhe Institute of Technology, PhD in Computer Science (summa cum laude) Aug 2017 - May 2024

- **Thesis:** Mollifying Realistic Image Synthesis for Time Constrained Rendering
- **Research:** Physically based and spectral rendering, fluorescence, regularization, path guiding.
- **Programming**: Mostly C, C++, Python, some bash. Linux and Windows.
- **Teaching:** Exercise for lectures, advising student projects and theses.

Karlsruhe Institute of Technology, M.Sc. in Computer Science Apr 2015 - Jun 2017

- **Thesis:** Fluorescence in Bidirectional Rendering

Cornell University, Ithaca NY. Semester abroad for Master's thesis Oct 2016 - Mar 2017

Karlsruhe Institute of Technology, B.Sc. in Computer Science Sep 2011 - Mar 2015

- **Thesis:** Irradiance Importance Sampling

Experience

Software Engineer, CAS Software AG, Karlsruhe Since Feb 2025

- Workflow automation, web services (Java, Python, C#)

Visiting Rendering Researcher, Weta Digital / Unity – Wellington, New Zealand Jan 2023 – Jun 2023

- Physically based rendering, path guiding and regularization in Manuka (C++)

Lecturer, Duale Hochschule Baden-Württemberg – Karlsruhe May 2015 – Jul 2015

- Lecturer for "Mobile Application Development"

Student Assistant, Karlsruhe Institute of Technology / Fraunhofer IOSB Oct 2012 - Sep 2016

- Programmer (C++) for data-driven BRDFs in photorealistic rendering (summer 2016)
- Programmer (C++) for path planning for a mobile robot platform and arm (summer 2014)
- Programmer (Java) for distributed smart home applications (summer 2013)
- Teaching Assistant tutoring for "Basic notions of computer science" (each winter term)

Voluntary Activities

Ultimate Frisbee Coach, MTV Karlsruhe Since 2018

- Coaching beginner and intermediate-level teams, planning and assisting at events

Student Dorm Activities, Hans Dickmann Kolleg Karlsruhe Apr 2012 – Sep 2016

- Various roles in dorm self-government, planning and assisting at events

Skills

- **Technologies:** C, C++, Python, C#, Java, Git, GitLab, Confluence. Linux, Windows.
  Basic experience: Bash, Docker, Jira, GLSL, Vulkan, OpenGL, Blender, Katana, Unity.
- **Languages:** German (native), English (proficient), French (basic)

Publications

Guiding Light Trees for Many-Light Direct Illumination.
Eric Hamann, Alisa Jung, Carsten Dachsbacher
Eurographics 2023 – Short Papers

Path Guiding with Vertex Triplet Distributions
Vincent Schüßler, Johannes Hanika, Alisa Jung, Carsten Dachsbacher
Computer Graphics Forum 41(4), EGSR 2022

Improving Spectral Upsampling with Fluorescence
Lars König, Alisa Jung, Carsten Dachsbacher
MAM2020: Eurographics Workshop on Material Appearance Modeling

Detecting Bias in Monte Carlo Renderers using Welch's t-test
Alisa Jung, Johannes Hanika, Carsten Dachsbacher
Journal of Computer Graphics Techniques Vol. 9 (2), 2020. Presented at I3D 2021.

Spectral Mollification for Bidirectional Fluorescence
Alisa Jung, Johannes Hanika, Carsten Dachsbacher
Computer Graphics Forum 39(2) (Proceedings of Eurographics) 2020

Wide Gamut Spectral Upsampling with Fluorescence
Alisa Jung, Alexander Wilkie, Johannes Hanika, Wenzel Jakob, Carsten Dachsbacher
Computer Graphics Forum 38(4), EGSR 2019, runner-up for best paper award

Selective guided sampling with complete light transport paths
Florian Reibold, Johannes Hanika, Alisa Jung, Carsten Dachsbacher
ACM Transactions on Graphics 37(6) (Proceedings of SIGGRAPH Asia 2018)

A Simple Diffuse Fluorescent BBRRDF Model
Alisa Jung, Johannes Hanika, Steve Marschner, Carsten Dachsbacher
MAM2018: Eurographics Workshop on Material Appearance Modeling