

TIMOTHY KOL

PROFILE



I am a researcher and software engineer who is passionate about computer graphics. I love seeing mathematics and code come to life in beautiful renderings or elegant solutions. I enjoy working at the intersection of research and development, making contributions to science while seeing them being applied first-hand. My research interests include alternative representations and rendering techniques for large virtual worlds, both in real-time and offline scenarios.

WORK EXPERIENCE



- 01/2018 - Today: Full-time computer graphics researcher at *OLM Digital, Inc.*, an animation studio based in Tokyo, Japan. Work includes research and development of graphics software using C++ and Python with the Autodesk Maya and Arnold APIs, and GPU programming in GLSL, HLSL and Cg. The tools are used by our artists in production for theatrical releases and TV series.
- 03/2011 - 02/2013: Part-time web developer at *Silicomp Software BV*, a software development company specialized in the tire and car parts industry based in Rotterdam, The Netherlands. Work included design and implementation of online shops and web services using PHP, JavaScript and HTML.
- 04/2011 - 07/2011: Internship game programmer at *Nexgen Studio, Pte Ltd*, a game development company based in Singapore. Work included design and implementation of mini-games based on speech recognition as part of an educative game using C# and WPF.

EDUCATION



- 12/2013 - 12/2017: PhD in the *Computer Graphics and Visualization* group at *Delft University of Technology* in The Netherlands. Graduated with my doctoral dissertation *Representing Large Virtual Worlds* as part of the *Harvest4D* EU project consortium. All research implemented using C++ and OpenGL, with GPU programming in GLSL.
- 09/2011 - 11/2013: Master of Science in *Game and Media Technology* (Computer Science) at *Utrecht University* in The Netherlands. Main focus on computer graphics. Graduated *cum laude* with my master thesis *Real-Time Cloud Rendering on the GPU*, implemented using C++, OpenGL and GLSL, with an average rounded grade of 8.5.
- 09/2008 - 09/2011: Bachelor of Science in *Computer Science* at *Delft University of Technology* in The Netherlands. Main focus on media and knowledge engineering. Graduated with an average rounded grade of 7.5. Additionally took courses in *Economics, Law and Management*.
- 08/2002 - 06/2008: VWO+ at *SG Spieringshoek* in Schiedam, the highest level of secondary education in The Netherlands. Main focus on natural sciences. Graduated with an average rounded grade of 7.5.

PUBLICATIONS



- ▣ *MegaViews: Scalable Many-View Rendering with Concurrent Scene-View Hierarchy Traversal*. T.R. Kol, P. Bauszat, S. Lee and E. Eisemann. In *Computer Graphics Forum*, 2019.
- ▣ *Expressive Single Scattering for Light Shaft Stylization*. T.R. Kol, O. Klehm, H.-P. Seidel and E. Eisemann. In *IEEE Transactions on Visualization and Computer Graphics*, 2017.
- ▣ *An Interactive Simulation and Visualization Tool for Flood Analysis Usable for Practitioners*. J.G. Leskens, C. Kehl, T. Tutenel, T.R. Kol, G. de Haan, G. Stelling and E. Eisemann. In *Mitigation and Adaptation Strategies for Global Change*, 2017.
- ▣ *Geometry and Attribute Compression for Voxel Scenes*. B. Dado, T.R. Kol, P. Bauszat, J.-M. Thiery, E. Eisemann. In *Computer Graphics Forum*, 2016.
- ▣ *Stylized Scattering via Transfer Functions and Occluder Manipulation*. O. Klehm, T.R. Kol, H.-P. Seidel and E. Eisemann. Proceedings of *Graphics Interface*, 2015.
- ▣ *Real-Time Canonical-Angle Views in 3D Virtual Cities*. T.R. Kol, J. Liao and E. Eisemann. Proceedings of *Vision, Modeling & Visualization*, 2014.

SKILLS



- ⚙ Seven years professional experience with object-oriented programming in C++ and GPU programming.
- ⚙ Further programming experience with the Maya, mental ray and Arnold APIs; C# and WPF; Java; Python; PHP, JavaScript, HTML, CSS and SQL, with an interest in learning more.
- ⚙ Strong academic knowledge of computer graphics techniques such as ray and path tracing and other light transport algorithms.
- ⚙ 2D and 3D design, with Photoshop, Illustrator, and Autodesk Maya and 3DS Max in particular.
- ⚙ Experience guiding students and interns.
- ⚙ Working on projects in a team, as this has been the norm during most of my career.
- ⚙ Fluent in Dutch and English, and basic knowledge of Spanish, German and Japanese.

INTERESTS



- 🌐 Traveling: photography, meeting new people, increasing my knowledge, and gaining new experiences.
- 🌐 Sports: football, fitness, and running.

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