

MIN SHIH

LinkedIn ◇ www.linkedin.com/in/min-shih

Website ◇ minshih.github.io

EDUCATION

University of California, Davis Ph.D. in Computer Science Dissertation: “ <i>High-end Volume Visualization</i> ” Overall GPA: 3.91	<i>2018</i>
National Tsing Hua University M.S. in Computer Science Thesis: “ <i>Real-time Ray Tracing with CUDA</i> ”	<i>2009</i>
National Tsing Hua University B.S. in Computer Science	<i>2007</i>

TECHNICAL STRENGTHS

Computer Languages	C/C++, GLSL, Python, JavaScript
Libraries & Frameworks	Qt, OpenGL, CUDA
Areas of Expertise	Computer graphics, data visualization, GPU computing

EXPERIENCE

University of California, Davis <i>Postdoctoral Scholar</i>	09/2018 - Present <i>Davis, CA</i>
---	---------------------------------------

- Working with Dr. Kwan-Liu Ma, VIDi Labs. <http://vidi.cs.ucdavis.edu>
- Working on a medical image visualization project, which targeting improving doctors’ workflow of inspecting CT images for surgery planning and research purposes.
- Supervising graduate students on a web-based remote rendering project and a VR volume visualization project.

Argonne National Laboratory <i>Research Internship</i>	06/2015 - 09/2015 <i>Lemont, IL</i>
--	--

- Developed a new global illumination calculation method for interactive large-scale volume visualization and added the advanced illumination capability to the vl3 parallel rendering code. This work was published at LDAV 2016, where it won Honorable Mention. It was also presented as part of Dr. Silvio Rizzi’s talk at GTC 2017 (<http://on-demand.gputechconf.com/gtc/2017/presentation/S7708-rizzi-enabling-scientific-discovery.pdf>).

University of California, Davis <i>Graduate Student Researcher / Teaching Assistant</i>	09/2011 - 06/2018 <i>Davis, CA</i>
---	---------------------------------------

- Member of VIDi Labs under Dr. Kwan-Liu Ma. <http://vidi.cs.ucdavis.edu>
- Completed the Ph.D. dissertation, which focused on high-quality and high-performance volume visualization, overcoming several challenges arising from the increasing demand for effectively visualizing large-scale and complex volumetric data produced by scientific simulations and medical imaging. The dissertation also addressed the usability aspect of volume visualization, demonstrating a novel user interface design based on declarative grammar for efficiently creating complicated visualization.

- Developed a volume visualization system from the ground up to support the research. The system, developed in C++ with Qt and OpenGL, enables interactive 3-D exploration of both scientific simulation data and medical imaging data. Besides desktop environments, the system also supports touch tables or tablets, on which users can intuitively interact with the 3-D data through multi-touch gestures.

PUBLICATIONS

- M. Shih, C. Rozhon, K.-L. Ma, “*A Declarative Grammar of Flexible Volume Visualization Pipelines*,” IEEE Transactions on Visualization and Computer Graphics (IEEE SciVis 2018), Berlin, Germany, 2018, forthcoming.
- J. Chu, C. Bryan, M. Shih, L. Ferrer, K.-L. Ma, “*Navigable Videos for Presenting Scientific Data on Affordable Head-Mounted Displays*,” Proceedings of the 8th ACM on Multimedia Systems Conference (MMSys’17), Taipei, Taiwan, 2017.
- M. Shih, S. Rizzi, J. Insley, T. Uram, V. Vishwanath, M. Hereld, M. E. Papka, K.-L. Ma, “*Parallel Distributed, GPU-Accelerated, Advanced Lighting Calculations for Large-Scale Volume Visualization*,” IEEE 6th Symposium on Large Data Analysis and Visualization (LDAV 2016), Baltimore, MD, 2016.
- M. Shih, Y. Zhang, K.-L. Ma, “*Advanced Lighting for Unstructured-Grid Data Visualization*,” 2015 IEEE Pacific Visualization Symposium (PacificVis), Hangzhou, China, 2015.
- M. Shih, Y. Zhang, K.-L. Ma, J. Sitaraman and D. Mavriplis, “*Out-of-Core Visualization of Time-Varying Hybrid-Grid Volume Data*,” IEEE 4th Symposium on Large Data Analysis and Visualization (LDAV 2014), Paris, France, 2014.
- M. Shih, Y.-F. Chiu, Y.-C. Chen, C.-F. Chang, “*Real-Time Ray Tracing with CUDA*,” In Proceedings of the 9th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP 2009), Taipei, Taiwan, 2009.