

Smart Tools and Applications in Graphics

—

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Invited Speaker

Learning Signals Across Scales

Thomas Leimkühler

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Abstract

Multiscale representations are essential for many computer graphics algorithms and applications, including filtering, level-of-detail, anti-aliasing, and coarse-to-fine optimization. While there are established methods for creating these representations in traditional data formats like pixel grids or triangle meshes, modern neural pipelines require new approaches.

In this talk, I will explore the design of multiscale representations in the form of continuous neural fields and introduce ideas for developing models that capture the visual appearance of the world across an orders-of-magnitude variety of scales.

Short Biography

Thomas Leimkühler is a research group leader at MPI Informatik, Germany. His research lies at the intersection between visual computing and machine learning, with special interests in neural signal representations, generative models, rendering of all flavors, and efficient parallel algorithms. Prior to his current position, Thomas was a postdoctoral researcher at Inria Sophia-Antipolis, France, following the completion of his PhD at MPI Informatik. Thomas is a recipient of a Eurographics PhD Award, the Otto Hahn Medal of the Max Planck Society, and several best-paper awards.