

Computer Graphics with Uncertainty

In the last few years, our group at Inria Sophia-Antipolis has developed a series of algorithms for image-based rendering and relighting ([Laffont12, Laffont13, Duchene15, Chaurasia11, Chaurasia13]) and for accelerated global illumination rendering ([Popov15]). An important challenge in the next few years will be to rethink traditional rendering algorithms so they can handle heterogeneous data (e.g., from scans, image-based capture, casual modeling, as well as traditional carefully hand-crafted complete models) in a consistent and principled manner. We have funding for a postdoctoral fellow (18 months), to work on these topics. The work will involve theoretical work on how to handle the incomplete and often uncertain nature of the data, as well as a significant algorithmic component.

The work is funded by the CR-PLAY (www.cr-play.eu) and the SEMAPOLIS (<https://project.inria.fr/semapolis/>) projects, but the successful candidate is expected to take initiative in the choice of topics.

The ideal candidate will have extensive knowledge of rendering (and in particular Monte Carlo global illumination) and image-based or video-based rendering, preferably with high quality publications in both. Candidates with expertise in only one of the two, but a willingness and interest in learning the other are strongly encouraged.

The ideal starting date is the first quarter of 2017, but this date is flexible.

Please contact George.Drettakis@inria.fr for further information.

The position will be at the GRAPHDECO research group in Sophia-Antipolis, <http://team.inria.fr/graphdeco> (which is the continuation of REVES <http://www-sop.inria.fr/reves>), situated in the beautiful French Riviera. All standard French public service, short term contract benefits apply: holidays, onsite subsidized restaurant etc.

References

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- [Laffont 12] Pierre-Yves Laffont, Adrien Bousseau, Sylvain Paris, Frédo Durand, George Drettakis, Coherent Intrinsic Images from Photo Collections, ACM Transactions on Graphics (SIGGRAPH Asia Conference Proceedings), Volume 31 – 2012: <http://www-sop.inria.fr/reves/Basilic/2012/LBPDD12/>
- [Chaurasia 13] Gaurav Chaurasia, Sylvain Duchêne, Olga Sorkine-Hornung, George Drettakis, Depth Synthesis and Local Warps for Plausible Image-based Navigation, ACM Transactions on Graphics, Volume 32, 2013 <http://www-sop.inria.fr/reves/Basilic/2013/CDSD13/>
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- [Duchene15] Multi-View Intrinsic Images of Outdoors Scenes with an Application to Relighting
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<http://www-sop.inria.fr/revs/Basilic/2015/DRCLLPD15/>
- [Popov15] Stefan Popov, Ravi Ramamoorthi, Frédo Durand, George Drettakis, Probabilistic Connections for Bidirectional Path Tracing
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