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Timothy R. Langlois

education

Ph.D., Computer Science, Cornell University, 2011–2016.
Advised by Doug James
Courses:

- Nonlinear Finite Element Methods
- Computational Motion
- Dynamical Systems
- Sparse Matrix Computations
- Programming Languages and Logics

- Realistic Image Synthesis
- Partial Differential Equations
- Operating Systems
- Analysis of Algorithms

B.S., Computer Systems Engineering, University of Massachusetts Amherst, 2009.
Summa Cum Laude
Double major in Computer Science

research interests

Computer Graphics
Computational Physics
Acoustics
Scientific Computing

publications

Conference and Journal Articles

Zhenyu Tang, Nicholas J. Bryan, Dingzeyu Li, Timothy R. Langlois, and Dinesh Manocha "Scene-Aware Audio Rendering via Deep Acoustic Analysis." *IEEE VR 2020 Journal Track (TVCG).* March, 2020.

Minchen Li, Ming Gao, Timothy R. Langlois, Chenfanfu Jiang, Danny Kaufman "Decomposed Optimization Time Ingetrator for Large-Step Elastodynamics." *ACM Transactions on Graphics (SIGGRAPH 2019).* August, 2019.

Rahul Arora, Alec Jacobson, Timothy R. Langlois, Yijiang Huang, Caitlin Mueller, Wojciech Matusik, Ariel Shamir, Karan Singh, David I.W. Levin "Volumetric Michell Trusses for Parametric Design & Fabrication." *Proceedings of the 3rd ACM Symposium on Computational Fabrication (SCF).* June, 2019.

Pedro Morgado, Nuno Vasconcelos, Timothy R. Langlois, Oliver Wang. "Self-Supervised Generation of Spatial Audio for 360° Video." *Neural Information Processing Systems (NIPS).* December, 2018.

Jui-Hsien Wang, Ante Qu, Timothy R. Langlois, Doug James. "Toward Wave-based Sound Synthesis for Computer Animation." *ACM Transactions on Graphics (SIGGRAPH 2018).* 37(4), August, 2018.

Dingzeyu Li, Timothy R. Langlois, Changxi Zheng. "Scene-Aware Audio for 360° Videos." *ACM Transactions on Graphics (SIGGRAPH 2018).* 37(4), August, 2018.

Timothy R. Langlois, Ariel Shamir, Daniel Dror, Wojciech Matusik, David I.W. Levin. "Stochastic Structural Analysis for Context-Aware Design and Fabrication." *ACM Transactions on Graphics (SIGGRAPH Asia 2016).* 35(6), December, 2016.

Timothy R. Langlois, Changxi Zheng, and Doug L. James. "Toward Animating Water with Complex Acoustic Bubbles." *ACM Transactions on Graphics (SIGGRAPH 2016).* 35(4), July, 2016.

Timothy R. Langlois, Steven S. An, Kelvin K. Jin, and Doug L. James. "Eigenmode Compression for Modal Sound Models." *ACM Transactions on Graphics (SIGGRAPH 2014)*. 33(4), August, 2014.

Timothy R. Langlois and Doug L. James. "Inverse-Foley Animation: Synchronizing rigid-body motions to sound." *ACM Transactions on Graphics (SIGGRAPH 2014)*. 33(4), August, 2014.

Timothy R. Langlois, Ramgopal R. Mettu, and Richard W. Vachet. "Protein Identification Using Receptor Arrays and Mass Spectrometry." *Advances in Computational Biology*, Springer Advances in Experimental Medicine and Biology Series. 680, 343-351, 2010.

Patents

Srinivas Ravela, William J. Dupree, Timothy R. Langlois, Marilyn M. Wolfson, and Christopher M. Yang. "Method and apparatus for generating a forecast weather image." U.S. Patent No. 8,625,840. 7 Jan. 2014.

experience   Senior Research Scientist: Adobe Research Creative Intelligence Lab, 2018-Present.

Research Scientist: Adobe Research Creative Technologies Lab, 2016-2018.

Research Intern: Disney Research Boston, 2015 (summer).

Software Engineer: MIT Lincoln Laboratory, 2009–2011.
   Developed distributed, real-time weather prediction algorithms.

Software Engineering Intern: Raytheon, 2008 (summer).

Software Engineering Intern: DEKA Research and Development, 2006–2008 (summers/winters).
   Developed software for embedded systems on various medical devices.

teaching   Teaching Assistant: Physically Based Animation (CS5643), Cornell University, 2015.

Teaching Assistant: Introduction to Computer Graphics (CS4620), Cornell University, 2013.

service   Reviewer:
- ACM SIGGRAPH
- ACM SIGGRAPH Asia
- ACM TON
- CGF
- TVCG
- ECCV
- Pacific Graphics
- IEEE VR

Volunteer: Adobe Employee Community Fund Grant Committee, 2018.
   Reviewed applications from nonprofit organizations for Adobe grants.

Organizer: Cornell Computer Science Student Brown Bag Seminar, 2013-2015.
   Organized weekly presentations on current research by graduate students.

Volunteer: Expand Your Horizons, 2012.
   Co-organized an educational workshop for middle-school students.

grants & awards   Recipient: National Science Foundation, Graduate Research Fellowship, 2012–2016.