

Michael Holroyd

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RESEARCH INTERESTS:

Computer graphics and vision, in particular 3D scanning and acquiring the optical scattering properties of physical objects.

EDUCATION:

- Ph.D. candidate in Computer Science, University of Virginia. (2006 - Present)
- B.S. in Computer Science, The College of William and Mary. (May 2006)
- B.S. in Mathematics with High Honors, The College of William and Mary. (May 2006)

PUBLICATIONS:

1. M. Holroyd, J. Lawrence, G. Humphreys, T. Zickler.
A Photometric Approach for Estimating Normals and Tangents.
ACM Transactions on Graphics (Proc. SIGGRAPH ASIA 2008), Vol. 27, p. 138.
2. R. Kincaid, N. Alexandrov, M. Holroyd.
An Investigation of Synchrony in Transport Networks.
Journal of Complexity 2009, Vol. 14, Issue 4, pp. 34-43.
3. R. Kincaid, C. Gatz, M. Holroyd.
Understanding the Structure of Power Law Networks.
Proceedings of Spring Simulation Multiconference 2007, Vol. 2, pp. 104-111.
4. M. Holroyd.
Connectivity and Synchronizability of Discrete Complex Systems
Proceedings of the Sixth International Conference on Complex Systems.
New England Complex Systems Institute, Quincy, MA. 2006.

PROFESSIONAL ACTIVITIES:

- UVA CS Graduate Student Group Steering Committee (2007-2009)
- Technical papers reviewer, ACM SIGGRAPH (2008).

TEACHING ACTIVITIES:

- "Information Security, CS451". University of Virginia (Fall 2006)
- "Introduction to Computer Science, CS101X". University of Virginia (Spring 2007)
- "Program and Data Representation, CS216". University of Virginia (Spring 2007)

RESEARCH EXPERIENCE:

Computer Graphics Research at University of Virginia (2006 - Present)

Advisor: Jason Lawrence

- Investigating improved methods for synchronous capture of 3D shape and visual appearance from physical objects. This work has involved constructing new optical scanning systems and designing advanced surface reconstruction techniques.

Interdisciplinary Research at the College of William and Mary (2004 - 2006)

Mathematics / Biology / Applied Science / Computer Science

Colleagues: Christopher Del Negro, John Hayes.

- Researching the cellular and synaptic origins of the mammalian respiratory rhythm. I proved analytic results on neuron network synchronization using techniques from graph theory and verified them using computer simulations.

Honors Thesis in Mathematics at the College of William and Mary (2006)

Advisor: Rex Kincaid.

- Study of oscillating behavior on large-scale network topologies. I implemented a high-performance computer simulation to run empirical experiments on large networks such as power grids, air transportation networks, and social networks.

AWARDS:

University of Virginia Dean's Fellowship (2006-2008)

University of Virginia Computer Science Summer Fellowship (Summer 2007)

Howard Hughes Medical Institute Travel Grant (Summer 2006)

The College of William and Mary Mathematics Department Conference Grant (Summer 2006)