Jason N. Laska

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Research Interests

→ Compressive sensing for imaging and real-time systems
→ Sparse approximation and compression
→ Geometrical image analysis

Education

- **B.S.** in **Computer Engineering**, *University of Illinois Urbana-Champaign* (2005)
- **M.S.** in **Electrical Engineering**, *Rice University* (Expected Summer 2007)
- Graduate Student in Electrical Engineering (Ph.D. sequence), *Rice University*

Academics

Rice University — *Research Assistant*
Houston, TX — **Current**
Research assistant to Professor Richard Baraniuk in the compressive sensing group. Main projects include *analog-to-information conversion* and the *compressive imaging camera*.
URL: http://dsp.rice.edu/cs
URL: http://dsp.rice.edu/cscamera

University of Illinois — *Undergraduate Researcher*
Urbana-Champaign, IL — **Spring Semester 2004**
Undergraduate research position with Professor Minh Do at the Universit of Illinois. Designed faster implementations of the non-subsampled contourlet transform (NSCT). Worked on new image analysis techniques using the NSCT.

Professional

ViaSat, Inc. — *Software Design Engineer: Intern*
Clarksburg, MD — **Summer 2005**
Main Task: Hardware-level C programming on real-time devices in order to increase throughput of networking devices through modifications to protocols.

Lehman College — *Software Programmer*
Bronx, NY — **Summer 2001**
Main Task: Transfer frames of DV data from an IEEE1394 port into memory for use by another application. The code converted the DV frames into RGB data for a special compression scheme.

Nola Recording Studios — *Recording Assistant: Intern*
New York, NY — **Summer 1999**
Responsibilities: Making coffee, learning about recording techniques and technologies.

Teaching

University of Illinois — *Undergraduate Teaching Assistant*
Urbana-Champaign, IL — **Fall Semester 2004**
This class uses a TI DSP processor and teaches students both assembly and C for implementing real-time projects. Responsibilities included: updating labs and course information on class webpage, publishing tutorials, and publishing other related course materials. Special code was written to help the PC interface with the DSP through the serial port. Materials published through The Connexions Project (cnx.rice.edu).
URL: http://www.ece.rice.edu/∼jnl5066/projects.php?name=Connexions%20Modules.content

Publications

Refereed Conference Publications

1. Sami Kirolos, Jason Laska, Michael Wakin, Marco Duarte, Dror Baron, Tamer Ragheb, Yehia Massoud, and Richard Baraniuk. Analog-to-information conversion via random demodulation. In *Proceedings of the IEEE Dallas Circuits and Systems Workshop (DCAS)*, 2006. To appear.
2. Jason Laska, Sami Kirolos, Yehia Massoud, Richard Baraniuk, Anna Gilbert, Mark Iwen, and Martin Strauss. Random sampling for analog-to-information conversion of wideband signals. In *Proceedings of the IEEE Dallas Circuits and Systems Workshop (DCAS)*, 2006. To appear.
3. D. Takhar, J. N. Laska, M. Wakin, M. Duarte, D. Baron, S. Sarvotham, K. K. Kelly, and R. G. Baraniuk. A new camera architecture based on optical-domain compression. In *Proc. IS&T/SPIE Symposium on Electronic Imaging: Computational Imaging*, volume 6065, Jan. 2006.
4. Michael Wakin, Jason Laska, Marco Duarte, Dror Baron, Shriram Sarvotham, Dharmpal Takhar, Kevin Kelly, and Richard Baraniuk. Compressive imaging for video representation and coding. In *Proc. Picture Coding Symposium (PCS)*, 2006.
5. Michael B. Wakin, Jason N. Laska, Marco F. Duarte, Dror Baron, Shriram Sarvotham, Dharmpal Takhar, Kevin F. Kelly, and Richard G. Baraniuk. An architecture for compressive imaging. In *Proc. International Conference on Image Processing (ICIP)*, 2006.

Technical Reports

1. Marco F. Duarte, Jason Laska, and Richard G. Baraniuk. Theoretical bounds for signal to noise ratio in analog to information conversion systems. Technical Report TREE-0608, Rice University ECE Department, Houston, TX, Sept. 2006.