Jason Michael Tokayer

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Education

- **University of Southern California** — Los Angeles, CA
  Ph.D. Candidate Electrical Engineering (GPA 3.92/4.00) — *2008 – present*
  - Thesis topic: Contributions to Fourier domain optical coherence tomography of the human retina
  - Expected graduation: December 2012
  - Visiting student, Center for Ophthalmic Optics and Lasers, Oregon Health and Science University
  - Co-advisors: Antonio Ortega, Ph.D. (USC), David Huang, M.D., Ph.D. (OHSU)
- **University of Southern California** — Los Angeles, CA
  M.S. Electrical Engineering (GPA 3.94/4.00) — *2006 – 2008*
- **Rutgers University** — Piscataway, NJ
  B.S. Electrical and Computer Engineering (GPA 3.86/4.00) — *2002 – 2006*

Research Projects

- **Quantification of Retinal Blood Flow**
  - Developed algorithms for enhancement of the visualization of human retinal vessels
  - Designed retinal vessel simulation for evaluating quantification algorithms
  - Performing laboratory experiments with phantom system to test novel quantification methods
- **Swept-Source Optical Coherence Tomography System**
  - Developing software in C++ for new state of the art high-speed system
  - Processing and analyzing data for the Advanced Imaging for Glaucoma study
- **Retinal Layer Segmentation Algorithm**
  - Demonstrated novel method for segmenting retinal boundaries in optical coherence tomography images
  - Algorithm utilizes modern sparse signal processing methods
- **Eye Gaze Detection with a Real-Time Digital Signal Processor**
  - Designed real-time system for gaze detection on a fixed-point Texas Instruments DSP board
  - Implemented ray tracing for feature point localization on the iris-sclera boundary

Journal Publications

- Y. Jia, O. Tan, **J. Tokayer**, B. Potsaid, Y. Wang, J. Liu, M. Kraus, H. Subhash, J. Fujimoto, J. Hornegger and D. Huang, "Split-spectrum amplitude-decorrelation angiography with optical coherence tomography", *Optics Express* **20**, 4710-4725 (2012).

Conference Publications

- **J. Tokayer**, A. Ortega and D. Huang, "Sparsity-based retinal layers segmentation of optical coherence tomography images", *The 18th International Conference on Image Processing* (ICIP2011). Brussels, Belgium. September 11-14, 2011.
- **J. Tokayer** and D. Huang, "Effect of blood vessel diameter on relative blood flow estimates in Doppler optical coherence tomography algorithms", *Proceedings of SPIE 78892X (2011)*

Conference Presentations

- **J. Tokayer**, O. Tan and D. Huang, "Spatial frequency filtering algorithms to enhance the visualization of retinal vessels in Doppler optical coherence tomography", poster presented at the Association for Research in Vision and Ophthalmology annual meeting, Fort Lauderdale, FL., May 2011
- **J. Tokayer** and D. Huang, "Algorithm for the improvement of macular blood vessel detection in Doppler optical coherence tomography", poster presented at the Association for Research in Vision and Ophthalmology annual meeting, Fort Lauderdale, FL., May 2010

Awards & Honors

Graduate Assistantship, Keck School of Medicine, USC . . . . . 2008 – 2012
Project of the year, Optics (EE 531), USC . . . . . Fall 2008
Annenberg Graduate Fellowship, USC . . . . . 2007 – 2008
Graduate Dean's Fellowship, USC . . . . . 2006 – 2010

Teaching Experience

- **Transform Theory** — University of Southern California
  Teaching Assistant — *Fall 2009*
  - Led weekly discussions with graduate students on various topics including complex numbers, contour integration and relevant (Fourier, Laplace, Z) transforms
- **Probability Theory** — University of Southern California
  Teaching Assistant — *Spring 2010*
  - Led weekly discussions with graduate students on various topics including counting problems, random variables and vectors and convergence of random sequences

Professional Affiliations

- Student member, The Institute of Electrical and Electronics Engineers (IEEE)
- Student member, The Society for Photo-Optical Instrumentation Engineers (SPIE)
- Student member, The Association for Research in Vision and Ophthalmology (ARVO)