

# Amit Ashok

---

230 Electrical and Computer Engineering  
P. O. Box 210104  
Tucson, AZ 85721

Phone: 520 465 4557  
ashoka@ece.arizona.edu  
<http://www.ece.arizona.edu/~ashoka>

**OBJECTIVE** Seeking a full-time research and development position in the area of novel imaging system design and related digital image processing algorithms.

**EDUCATION**

- **Ph.D. in Electrical Engineering** Aug. 2007(Expected)  
University of Arizona, Tucson, AZ **Minor: Optical Sciences**  
Research area: Computational Imaging and Task-Specific Information metrics for Imaging.
- **M.S. in Electrical Engineering** 2001  
University of Cape Town, South Africa  
Thesis Title: Implementation and analysis of a Bayesian approach to multiple-antenna SAR interferometry.
- **B.Sc. in Electronics and Telecommunication Engineering** 1998  
University of Swaziland, Swaziland.

**EXPERIENCE**

- **Graduate Research Associate** Jan. 2003 - present  
Optical Computing and Processing Lab University of Arizona  
Designed an ultra-thin imager using PSF engineering for DARPA's MONTAGE project.  
Developing Task-Specific Information metric for imaging system design and analysis.  
Designing imager for Iris-recognition application with task-specific metrics.
- **Graduate Teaching Assistant** Jan. 2002 - May 2002  
Department of Electrical and Computer Engineering University of Arizona  
Electrical Engineering Lab course.
- **Graduate Teaching Assistant** Feb. 2001 - Nov. 2001  
Department of Electrical Engineering University of Cape Town  
Electromagnetics and Digital Signal Processing courses.
- **Graduate Research Assistant** Feb. 2001 - Nov. 2001  
Department of Electrical Engineering University of Cape Town  
Radar system design, multiple-antenna interferometric SAR, and real-time optical tracking system simulator.
- **Graduate Teaching Assistant** May 2000 - Aug. 2000  
Department of Electrical Engineering University of Cape Town  
Electrical circuits and Power engineering courses.

**RELEVANT COURSEWORK** Advanced Medical Imaging, Advanced Computational Imaging, Noise in Imaging Systems, Principles of Image Science, Physical Optics, Statistical Optics, Optical Physics and Lasers, Optical Communication Systems, Neural Networks and Information Theory.

**SKILLS**

- Proficient in C/C++ and Matlab.
- Working knowledge of ZEMAX.
- Lab experience with scientific CCD sensors, lasers, illumination sources, imaging optics.
- Developed a High-Performance Computing Cluster system for imaging research.

- PUBLICATIONS
- Amit Ashok, Pawan Baheti and Mark A. Neifeld, “Task-specific information: an imaging system analysis tool,” to appear in Proc. of Visual Information Processing XVI, Florida, 2007.
  - Amit Ashok and Mark A. Neifeld, “Pseudo-random phase masks for super-resolution imaging from sub-pixel shifting,” to appear in Applied Optics, 2007.
  - Mark A. Neifeld, Amit Ashok, and Pawan Baheti, “Task Specific Information for Imaging System Analysis,” submitted to JOSA A, 2007.
  - Amit Ashok, Pawan Baheti and Mark A. Neifeld, “Task-specific Information,” Frontiers in Optics, OSA Technical Digest Series(OSA), paper FWH4, Rochester, 2006.
  - Amit Ashok and Mark A. Neifeld, “Recent progress on multi-domain optimization for ultrathin cameras,” **Invited Talk**, Proceedings of SPIE 6232, Intelligent Integrated Microsystems, 62320N, 2006.
  - Amit Ashok and Mark A. Neifeld, “Engineering the Point-Spread-Function for Super-Resolution from Multiple Low-Resolution Sub-Pixel Shifted Frames,” Frontiers in Optics, OSA Technical Digest Series(OSA), paper FThU4, Tucson, 2005.
  - Mark A. Neifeld and Amit Ashok, “Imaging using Alternate Point Spread functions: Lenslets with Pseudo-Random Phase Diversity,” **Invited Talk**, OSA Topical Meeting: Computational Optical Sensing and Imaging (COSI), North Carolina, 2005.
  - Amit Ashok and Mark A. Neifeld, “Information-based analysis of simple incoherent imaging systems,” Optics Express,**11**, pp. 2153-2162, 2003.
  - Amit Ashok and Mark A. Neifeld, “Information-theoretic Capacity of Simple Imaging Systems,” Frontiers in Optics, OSA Technical Digest Series (OSA), Tucson, 2003.
  - Mark A. Neifeld and Amit Ashok, “An Information-Based Analysis of Two Single-Detector Imaging Systems,” Proceedings of the 7th Joint Conference on Information Sciences(JCIS),Cary, North Carolina, pp.1404-1407, 2003.
  - Amit Ashok and Andrew J. Wilkinson, “Topographic mapping with multiple antenna SAR interferometry:a Bayesian model-based approach,” Geoscience and Remote Sensing Symposium (IGARSS), vol. 5, pp.2058-2060, Sydney, 2001.
- AWARDS
- International Student Scholarship, University of Cape Town, 1999 and 2000.
  - Dean’s award for best academic performance, University of Swaziland, 1998.
  - Vice-Chancellor award for best academic performance, University of Swaziland, 1998.
  - Sino-Swazi award for best academic performance, University of Swaziland, 1995.
- PROFESSIONAL MEMBERSHIP
- Student member of Optical Society of America(OSA).
  - Student member of Institute of Electrical and Electronics Engineers(IEEE).
  - Student member of International Society for Optical Engineering(SPIE).
- REFERENCE Available on request.