

Curriculum Vitae

PETER A. YOON

EDUCATION

- Doctor of Philosophy, Computer Science, Pennsylvania State University, University Park, PA, 1995.
- Master of Science, Mathematics, Purdue University, West Lafayette, IN, 1989.
- Bachelor of Science, Computer Science, North Carolina State University, Raleigh, NC, 1986.
- Bachelor of Science, Applied Mathematics, North Carolina State University, Raleigh, NC, 1986.

PROFESSIONAL EXPERIENCE

- Chair of Department of Computer Science, Trinity College, Hartford, CT, July 2009 – Present.
- Associate Professor, Department of Computer Science, Trinity College, Hartford, CT, July 2006 – Present.
- Assistant Professor, Department of Computer Science, Trinity College, Hartford, CT, July 2000 – June 2006.
- Assistant Professor, Computer Science Department, Azusa Pacific University, Azusa, CA, 1995–2000.
- Research Assistant, Signal Processing Department, Applied Research Laboratory, University Park, PA, 1991–1995.
- Teaching Assistant, Department of Mathematics, Purdue University, West Lafayette, IN, 1986–1989.
- Systems Programmer, Consumer Products Division, IBM Corporation, Raleigh, NC, 1983–1986.

RESEARCH EXPERIENCE

Publications

PUBLISHED

- C.M. Coviello, L.H. Sibul, and P.A. Yoon. Source separation and tracking for time varying systems. *IEEE Transactions on Aerospace and Electronic Systems*, 44:1198-1214, 2008.
- H. Rushmeier, J. Dykes, J. Dill, and P. Yoon. Revisiting the Need for Formal Education in Visualization, *IEEE Computer Graphics and Applications*, 27:12-16, 2007.
- A. Williams and P.A. Yoon, Content-based image retrieval using joint correlograms. *Multimedia Tools and Applications*, 34: 239-248, 2007.
- C.M. Coviello, L.H. Sibul, and P.A. Yoon. A stable, adaptive method for joint blind source separation and angle estimation in a non-stationary environment. *Proceedings of the 39th Conference on Information Sciences and Systems*, 2005.
- C.M. Coviello, L.H. Sibul, and P.A. Yoon. Multipath DOA tracking using complete orthogonal decompositions. *Proceedings of the 38th Conference on Information Sciences and Systems*, pages 1481–1486, 2004.
- M. Emilio, A. Williams, and P.A. Yoon. A path search algorithm for independent component analysis used in blind source separation. *Proceedings of the 18th International Congress of Acoustics*, pages 325–326, 2004.
- C.M. Coviello, L.H. Sibul, and P.A. Yoon. Algebraic DOA estimation and tracking using ULV decomposition. *Proceedings of the 2003 International Conference on Neural Networks and Signal Processing*, pages 1310–1313, 2003.
- T. Ning and P.A. Yoon. Independent component analysis of multichannel hippocampal EEG during REM sleep. *Proceedings of the 5th IASTED International Conference on Signal and Image Processing*, pages 513–516, 2003.
- L.H. Sibul and P.A. Yoon. An efficient preprocessor for nonlinear adaptive algorithms. *Proceedings of the 6th International Conference on Signal Processing*, pages 1617–1620, 2002.

- L.H. Sibul and P.A. Yoon. An efficient array processor for accurate downdating of ULV decomposition. *Proceedings of SPIE Advanced Signal Processing Algorithms, Architectures, and Implementations XI*, volume 4474, pages 262–272, 2001.
- P.A. Yoon. Parallel recursive total least squares solution using ULV decomposition. *Proceedings of the 10th SIAM Conference on Parallel Processing for Scientific Computing*, 2001.
- P.A. Yoon and J.L. Barlow. An efficient rank detection procedure for modifying the ULV decomposition. *BIT*, 38:781–801, 1998.
- J.L. Barlow and P.A. Yoon. Solving recursive TLS problems using the rank-revealing ULV decomposition. In S. Van Huffel, editor, *Recent Advances in Total Least Squares Techniques and Error-in-Variables Modeling*, pages 117–126, SIAM, Philadelphia, PA, 1997.
- J.L. Barlow and P.A. Yoon. Modifying the singular value decomposition on the Connection Machine. *International Journal of High Speed Computing*, 8:145–170, 1996.
- J.L. Barlow, P.A. Yoon and H. Zha. An algorithm and a stability theory for downdating the ULV decomposition. *BIT*, 36:14–40, 1996.
- J.L. Barlow, H. Zha, and P.A. Yoon. Stable chasing algorithms for modifying complete and partial singular value decompositions. *Proceedings of SPIE Advanced Signal Processing Algorithms, Architectures, and Implementations IV*, volume 2027, pages 455–466, 1993.

EXTENDED ABSTRACTS

- C.M. Coviello, L.H. Sibul, and P.A. Yoon. Blind source separation, blind beamforming, ULV decomposition, subspace tracking, direction-of-arrival estimation. *The 2003 IEEE Underwater Acoustic Signal Processing Workshop*, page 33, 2003.
- C.M. Coviello, L.H. Sibul, and P.A. Yoon. ULV decomposition as preprocessor for nonlinear adaptive algorithms. *The 2001 IEEE Underwater Acoustic Signal Processing Workshop*, pages 22–23, 2001.
- Y. Chen, S. Sambasivam, and P.A. Yoon. Building a next-generation infrastructure for the software engineering education support. *Proceedings of the 13th Conference on Software Engineering Education and Training*, pages 216–217, 2000.

TECHNICAL REPORTS

- P.A. Yoon. Modifying the singular value decomposition in parallel. Technical Report IM-95-028, Applied Research Laboratory, The Pennsylvania State University, University Park, PA, March 1995.
- R.L. Tutwiler and P.A. Yoon. Synthetic map generation using radial basis functions. Technical Report IM-90-369, Applied Research Laboratory, The Pennsylvania State University, University Park, PA, December 1990.

Grants

- Faculty Development Grant, Trinity College, \$5,000, 2006-2007.
- NASA EPSCoR Core Funding Grant, “An efficient dimensionality reduction technique for content-based image retrieval,” \$13,000, 2006-2007.
- Student Research Assistant Grant, “Tracking moving sources in a noisy environment,” \$3,500, Trinity College, 2006–2007.
- Student Research Assistant Grant, “Analysis of subspace methods for blind beamforming,” \$3,500, Trinity College, 2005–2006.
- NASA EPSCoR Core Funding Grant, “A path search algorithm for independent component analysis,” \$10,000, 2004–2005.
- Student Research Assistant Grant, “Quasi-Newton method and its application to blind source separation,” \$6,994, Trinity College, 2004–2005.
- NASA EPSCoR Core Funding Grant, “Blind source separation and truncated ULV decomposition,” \$10,000, 2003–2004.
- Student Research Assistant Grant, “Applications of blind source separation in science and engineering,” \$6,000, Trinity College, 2003–2004.
- NASA EPSCoR Core Funding Grant, “An efficient method for clustering documents using two-sided orthogonal decompositions,” \$10,000, 2002–2003.

- Student Research Assistant Grant, “Clustering online documents on the World Wide Web”, \$1,980, Trinity College, 2001–2002.
- Faculty Research Grant, “Total least squares method and its application to process tomography,” \$6,150, Azusa Pacific University, 1996–1998.

Undergraduate Research Students

- Kalin Gochev '09 – supported by Trinity College Student Research Assistant Grant.
- Adam Williams '04 – supported by NASA EPSCoR Core Funding Grant and Trinity College Student Research Assistant Grant.
- Meghan Emilio '04 – supported by NASA EPSCoR Core Funding Grant and Trinity College Student Research Assistant Grant.
- Bryan Dion '03 – supported by Trinity College Student Research Assistant Grant.
- Nate Jones – supported by Azusa Pacific University Faculty Research Grant.

Seminars, Conferences and Workshops

- Attendee at the I3D '09, Boston, MA, February 2009.
- Attendee at the Supercomputing '06, Tampa, FL, November 2006.
- Attendee at the Visualization '06, Baltimore, MD, October 2006.
- Attendee at the Real-Time Ray Tracing Conference, Salt Lake City, UT, September 2006.
- Attendee at the SIGGRAPH '06, Boston, MA, August 2006.
- Attendee at the 2005 IEEE Underwater Acoustic Signal Processing Workshop, West Greenwich, RI, October 2005.
- Session chair and speaker at the 8th Joint Conference on Information Sciences, Salt Lake City, UT, July 2005.
- Session chair at the 39th Conference on Information Sciences and Systems, Baltimore, MD, March 2005.
- Attendee at the 2005 IEEE International Conference on Acoustics, Speech, and Signal Processing, Philadelphia, PA, March 2005.
- Session chair and speaker at the 18th International Congress of Acoustics, Kyoto, Japan, April 2004.
- Session chair and speaker at the 5th IASTED International Conference on Signal and Image Processing, Honolulu, HI, August 2003.
- Attendee at the 8th SIAM Conference on Applied Linear Algebra, Williamsburg, VA, June 2003.
- Speaker at the 6th International Conference on Signal Processing, Beijing, China, August 2002.
- Attendee at the Second SIAM International Conference on Data Mining, Arlington, VA, April 2002.
- Speaker at the Trinity Center for Collaborative Teaching & Research (TCCTR) Newer Faculty Brown Bag Lunch Series, April 2002.
- Attendee at the 7th Annual Consortium for Computing Sciences in Colleges, Northeastern Conference, Springfield, MA, April 2002.
- Speaker at the 4th SIAM Conference on Linear Algebra in Signals, Systems and Control, Boston, MA, August 2001.
- Speaker at the SPIE's 46th Annual Meeting, San Diego, CA, July 2001.
- Attendee at the Future of High Performance Cluster Computing Workshop, New York, NY, March 2001.
- Poster presenter at the 10th SIAM Conference on Parallel Processing for Scientific computing, Portsmouth, VA, March 2001.
- Attendee at the 7th SIAM Conference on Applied Linear Algebra, Raleigh, NC, October 2000.
- Poster presenter at the 13th Conference on Software Engineering Education and Training, Austin, TX, March 2000.
- Attendee at the 9th SIAM Conference on Parallel Processing For Scientific Computing, San Antonio, TX, March 1999.
- Attendee at the SIGCSE Technical Symposium on Computer Science, New Orleans, LA, March 1999.
- Speaker at the Faculty Research Forum, Azusa Pacific University, Azusa, CA, September 1999.

- Attendee at the Parallel Computing Workshop, San Diego Supercomputing Center, San Diego, CA, January 1999.
- Attendee at the ACM Workshop on Java for High-Performance Network Computing, Palo Alto, CA, March 1998.
- Speaker at the Faculty Research Forum, Azusa Pacific University, Azusa, CA, September 1998.
- Speaker at the 7th SIAM Conference on Parallel Processing For Scientific Computing, San Francisco, CA, February 1995.
- Speaker at the 5th SIAM Conference on Applied Linear Algebra, Snowbird, UT, June 1994.
- Speaker at the SPIE's 38th Annual Meeting, San Diego, CA, June 1994.

Professional Affiliations

- Member, Institute of Electrical and Electronics Engineers (IEEE)
- Member, Association for Computing Machinery (ACM)

TEACHING EXPERIENCE

Courses Taught

- Department of Computer Science, Trinity College, Hartford, CT.
 - CPSC 110 Interactive Computer Graphics
 - CPSC 114 Introduction to Internet Computing
 - CPSC 115L Introduction to Computing
 - CPSC 215L Data Structures and Algorithms
 - CPSC 230 Machine Organization and Assembly Language
 - CPSC 304 Computer Graphics
 - CPSC 315 Systems Software
 - CPSC 316 Foundations of Programming Languages
 - CPSC 333 Computer Network
 - CPSC 371 Compiler Theory and Construction
 - CPSC 375 High-Performance Computing
 - FYFO 101 First-Year Seminar – “Reacting to the Past”
- Department of Computer Science, Azusa Pacific University, Azusa, CA.
 - Systems Programming I, II
 - Computer Architecture and Organization
 - Numerical Analysis
 - Operating Systems
 - Objected-Oriented Programming
 - Information Structures and Algorithm Design
 - Local Area Networks
 - Applied Artificial Intelligence
 - Compiler Construction
 - Concurrent Database Systems
 - Windows Software Development
- Department of Mathematics, Purdue University, West Lafayette, IN.
 - College Algebra
 - Mathematics for Elementary Teachers
 - Calculus I, II

Courses Developed

- Interactive Computer Graphics, Trinity College, 2007.
- High-Performance Computing, Trinity College, 2001.
- Windows Software Development (on-line course), Azusa Pacific University, 1999.

- Operating Systems, Computing Information Systems Program, Azusa Pacific University, 1999.
- Computer Organizations, Computing Information Systems Program, Azusa Pacific University, 1995.

Projects/Theses Supervised

- Kalin Gochev, "Parallel Ray-Tracing Algorithm with Advanced Lighting Effect," 2009.
- Brian Sinnott, "Online Chemistry Testing System", 2008.
- Todd Klasik, "User Interface for Interactive Computer Graphics," 2008.
- Michael Sollami, "Starfile Retrieval System," Trinity College, 2007.
- Andy Molina, "Steganography: The art of information hiding," Trinity College, 2006.
- Scott Troost, "Virtual Stage," Trinity College, 2005.
- Adam Williams, "Image search engines," Trinity College, 2004.
- Bryan Dion, "Building high-performance computing systems," Trinity College, 2002.
- Jonathan Kinsman, "E-commerce functionality for small business," Trinity College, 2002.
- Cabral Thomas, "Voice integration with the Web," Trinity College, 2002.
- Oliver Page, "A restaurant server Palm Pilot menu," Trinity College, 2001.
- Nate Jones, "Solving total least squares problem in parallel," Azusa Pacific University, 1999.
- Kenneth Van Train, "Insight – A clinic information system," Master's Thesis, Azusa Pacific University, 1996.

Other Activities

- Organizer, Reading Group on Scientific Computing, Trinity College, 2003.
- Co-organizer, Workshops on UNIX and C programming languages, Trinity College, 2003.

SERVICE

Committees Served

- IDP (Individualized Degree Program) Council, Trinity College, 2005 – Present.
- ITEC (Information Technology in Education Committee), Trinity College, 2005 – 2008.
- Advisory Committee on Fraternities and Sororities, Trinity College, 2001-2004.

Other Activities

- Co-organizer, The Connecticut-Trinity-Wesleyan Joint Colloquium Series, 2005.
- Webmaster, Department of Computer Science, Trinity College, 2001 – Present.
- Coach, Trinity College ACM programming teams, 2004.
- Coach, Azusa Pacific University ACM programming teams, 1997–1999.