Joseph P. Havlicek

The University of Oklahoma, School of Electrical & Computer Engineering
110 W. Boyd, DEH 150, Norman, OK 73019
Tel: (405) 325-8131   Fax: (405) 325-7066
E-mail: `joebob@ou.edu`
http://www.ou.edu/content/coe/ece/faculty_directory/dr_havlicek.html

Title: Gerald Tuma Presidential Professor
Unit: School of Electrical and Computer Engineering
Director: OU Center for Intelligent Transportation Systems
Member: OU Institute for Biomedical Engineering, Science, and Technology

► **Citizenship:** USA

► **Education:**

PhD EE   The University of Texas at Austin, 1996.
          Dissertation: "AM-FM Image Models."
          Advisor: Prof. Alan C. Bovik.
MSEE   Virginia Tech, 1988.
          Thesis: "Median Filtering for Target Detection in an Airborne Threat Warning
                   System."
          Advisor: Prof. John C. McKeeman.
BSEE   Virginia Tech, 1986. Minors in Mathematics, Computer Science.

► **Professional Experience:**

1/97 - present: School of Electrical & Computer Engineering, Univ. OK, Norman, OK

Gerald Tuma Presidential Professor:	4/17 - present
Williams Companies Foundation Presidential Professor:	4/09 - 4/17
Professor:	7/07 - present
Associate Professor:	7/02 - 6/07
Assistant Professor:	1/97 - 6/02

Held tenure track position requiring research, teaching, and service, as well as establishment of strong, externally funded research programs in signal, image, and video processing and intelligent transportation systems. Director and co-founder, OU Center for Intelligent Transportation Systems. Member, OU Institute for Biomedical Engineering, Science, and Technology. Total external grants and contracts exceeding $19M.

6/87 - 1/97: U.S. Naval Research Laboratory, Washington, DC
Electrical Engineer
(Was affiliated with SFA, Inc., Landover MD, from 6/87-8/89)
(Was on *leave without pay* during semesters spent at UT Austin)
Engineering member of the team that developed the Navy's first two-color infrared missile warning receiver (Fly's Eye). The production version of this system protects Navy and Marine helicopters from surface to air missile attacks in Afghanistan and Iraq. Received the Department of the Navy Award of Merit for Group Achievement for this work. Designed and analyzed new algorithms for infrared target detection, tracking, and identification. Designed digital architectures for real-time implementation. Conducted experimental work on airborne and ground-based platforms. Extensive field experience at China Lake Naval Weapons Center, Miramar Naval Air Station, Patuxent River Naval Air Station, and Sandia National Laboratories.

6/93 - 12/96: Dept. Electrical & Computer Engineering, University of Texas, Austin, TX
Assistant Director, Laboratory for Vision Systems
Senior student administrator of laboratory whose members include approximately 12 research-supported graduate students. Authored and integrated grant proposals. Briefed sponsors. Authored contract reports. Reviewed papers for journals and conferences. Advised graduate students. Supervised honors undergraduate projects. Substitute lecturer for both graduate and undergraduate courses in the systems area.

1/93 - 12/93: Dept. E51, Still Video Products, IBM Corporation, Austin, TX
Software Developer
(on-sight contractor affiliated with Ralph Kirkley Associates, Austin, TX)
Developed C code for IBM PS/2 computers under OS/2 and MS Windows to port an implementation of the JPEG image compression/decompression standard from the IBM M/ACPA card to the IBM AudioVation card.

8/87 - 8/88: Bradley Department of Electrical Engineering, VPI & SU, Blacksburg, VA
Graduate Research Assistant
Under contract with NRL, led 9-man team in chip-level simulation of a real-time nonlinear image filter. Under contract with IBM, investigated the feasibility and performance of networks of LEO store-and-forward communication satellites.

12/84 - 5/87: Management Systems Laboratories, Blacksburg, VA
Software Engineer
Under contract with DOE, designed and implemented management decision support software for nuclear materials management on IBM mainframe computers.

▶ **Expert Testimony History:**

- In the matter of *Certain Electronic Devices, Including Computers, Tablet Computers, and Components and Modules Thereof*, USITC Investigation No. 337-TA-1208. Retained by WilmerHale LLP on behalf of Lenovo (United States) Inc., Morrisville, NC, 8/20 - present.
- In the matter of *Park Assist, LLC v. San Diego County Regional Airport Authority and Ace Parking Management, Inc.*, Case No. 3:18-cv-02068-BEN-MDD, U.S. District Court for the Southern District of CA. Testified at deposition, provided one claim construction declaration. Retained by Morrison & Foerster LLP on behalf of SDCRAA, San Diego, CA, 7/20 - present.
- In the matter of *LG Electronics Inc. v. Hisense Electronics Manufacturing Company of America Corp.*, Civil Case No. 2:19-cv-09474-JAK, U.S. District Court for the Central District of CA, Western Division. Provided one claim construction declaration, testified at deposition. Retained by Covington & Burling LLP on behalf of Hisense Electronics Manufacturing Company of America, Inc., Suwanee, GA, 7/20 - present.
- In the matter of *Renesas Electronics Corporation v. Broadcom Corporation*, IPR2019-01040. Provided one IPR declaration. Retained by Steptoe & Johnson LLP on behalf of Broadcom Limited, San Jose, CA, 6/20 - present.
- In the matter of *Hisense Electronics Manufacturing Company of America v. LG Electronics Inc.*, Petition for IPR of U.S. Patent No. 7,839,452. Provided one IPR declaration. Retained by Covington & Burling LLP on behalf of Hisense Electronics Manufacturing Company of America, Inc., Suwanee, GA, 3/20 - present.
- In the matter of *Intel Corporation v. Dynamic Data Technologies, LLC*. Provided one IPR declaration; case settled before filing. Retained by Perkins Coie LLP on behalf of Intel Corporation, Santa Clara, CA, 3/19 - 6/19.
- In the matter of *Unified Patents, Inc. v. Velos Media, LLC*, IPR2019-01130. Provided one IPR declaration. Retained by Greenberg Traurig LLP on behalf of Unified Patents, Inc., San Jose, CA, 2/19 - 12/19.
- In the matter of *Unified Patents, Inc. v. Velos Media, LLC*, IPR2019-00763. Provided two declarations, testified at deposition. Retained by Winston & Strawn LLP and Greenberg Traurig LLP on behalf of Unified Patents, Inc., San Jose, CA, 10/18 - present.
- In the matter of *Avago Technologies General IP (Singapore) Pte. Ltd. v. Nintendo of Europe GmbH*. Provided written opinions to the German Federal Patent Court. Retained by

Freshfields Bruckhaus Deringer LLP on behalf of Avago Technologies General IP (Singapore) Pte. Ltd., 9/18 - 10/18.

- In the matter of *Certain Infotainment Systems, Components Thereof, and Automobiles Containing the Same*, USITC Investigation No. 337-TA-1119. Provided infringement analysis, one declaration. Retained by Steptoe & Johnson LLP on behalf of Broadcom Limited, San Jose, CA, 3/18 - 2/19.
- In the matter of *Cisco Systems, Inc. v. Realtime Adaptive Streaming, LLC*, USPTO Case No. IPR2018-01384. Provided one IPR declaration. Retained by Winston & Strawn LLP on behalf of Cisco Systems, Inc., San Jose, CA, 3/18 - 8/18.
- In the matter of *Avago Technologies General IP (Singapore) Pte. Ltd. v. Audi AG*. Provided written opinion to the German Federal Patent Court. Retained by Grünecker Patent- und Rechtsanwälte PartG mbB on behalf of Avago Technologies General IP (Singapore) Pte. Ltd., 3/18 - 11/18.
- In the matter of *Certain Semiconductor Devices and Consumer Audiovisual Products Containing the Same*, USITC Investigation No. 337-TA-1047. Testified at deposition and trial. Provided three expert reports, two declarations, and three witness statements. Retained by Steptoe & Johnson LLP and Kilpatrick, Townsend & Stockton LLP on behalf of Broadcom Limited, San Jose, CA, 3/17 - 12/17.
- In the matter of *Certain Semiconductor Integrated Circuits and Products Containing Same*, USITC Investigation No. 337-TA-840. Infringement analysis and one written declaration. Retained by Covington & Burling LLP on behalf of Microchip Technology, Chandler, AZ, 2/17/12 - 3/21/12.

► **Honors & Awards:**

- Best Reviewer Award, 2020 IEEE International Conference on Image Processing.
- Top Reviewer Certificate, 2020 IEEE International Conference on Image Processing, awarded to top 3% out of over 700 reviewers.
- Named to the University of Oklahoma Gerald Tuma Presidential Professorship, 2017.
- *2014 IEEE International Conference on Image Processing Top 10% Paper Award*, for C.T. Nguyen and J.P. Havlicek, "On the amplitude and phase computation of the AM-FM image model."
- Named to the University of Oklahoma Williams Companies Foundation Presidential Professorship, 2009.
- Oklahoma Highway Safety Office Project Director's Award, FY 2009, co-recipient with Dr. R.D. Barnes, for implementing police electronic crash reporting in the State of Oklahoma.
- IEEE Maximum Impedance Award, OU School of ECE, 2007.
- University of Oklahoma College of Engineering Outstanding Faculty Advisor Award, 2005-2006.
- Oklahoma Highway Safety Office Award of Excellence, FY 2005, presented to the OU ITS Lab for enhancing traffic records management through project SAFE-T.
- Oklahoma Highway Safety Office Project Director's Award, FY 2003, co-recipient with Dr. J.J. Sluss, Jr., for enhancing highway safety through ITS projects.
- University of Oklahoma College of Engineering Brandon H. Griffith Faculty Award, 2003.
- Listed at number 22 in OU *FY 99 Awards – Top 25 Faculty/Staff – Norman Campus*.
- IEEE Favorite Instructor Award, OU School of ECE, 1998, 2000.
- University of Texas Engineering Foundation Award for Exemplary Engineering Teaching while Pursuing a Graduate Degree, 1992.
- Department of the Navy Award of Merit for Group Achievement, 1990.
- Management Systems Laboratories Outstanding Student Employee Scholarship, 1987.
- Eta Kappa Nu Honor Society
- Tau Beta Pi Honor Society
- Phi Kappa Phi Honor Society
- Listed in *Who's Who in America*, 2002 Ed.

► **Professional Memberships:**

- Institute of Electrical and Electronics Engineers (IEEE), Senior Member

- IEEE Intelligent Transportation Systems Society
- IEEE Computer Society

▶ **Professional Service:**
- Senior Area Editor, *IEEE Transactions on Image Processing*, Nov. 2015 - Feb. 2018.
- Associate Editor, *IEEE Transactions on Image Processing*, Dec. 2010 - Oct. 2015.
- Associate Editor, *IEEE Transactions on Industrial Informatics*, Jan. 2010 - Jul. 2013.
- *IEEE International Conference on Image Processing (ICIP)*
    - 2016: Paper Awards Committee.
    - 2013: Technical Area Chair for EDICS 6.1: Image & Video Analysis, Synthesis, and Retrieval.
    - 2012: Technical Area Chair for EDICS 6.2: Image & Video Analysis, Synthesis, and Retrieval; Session Chair.
    - 2007: Publications Chair, Organizing Committee, and Session Chair.
    - Reviewer (1998 - present).
- *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*
    - 2012, 2013, 2014: IVMSP Technical Area Chair
    - Reviewer (2005-present).
- *IEEE Southwest Symposium on Image Analysis and Interpretation (SSIAI)*
    - 2020: Technical Program Committee, Session Chair.
    - 2016: Technical Program Committee.
    - 2012, 2014: Technical Program Committee, Session Chair.
    - 2010: General Co-Chair (with Prof. Scott Acton, University of Virginia).
    - 2008: Technical Program Co-Chair (with Prof. Scott Acton, University of Virginia).
    - 2006: Technical Program Co-Chair (with Prof. Til Aach, RWTH Aachen University, Germany).
    - 2004: Technical Program Co-Chair (with Prof. Til Aach, Medical University of Luebeck, Germany).
    - 2002: Publicity Chairman, Technical Program Committee, Session Chair.
    - 2000: Publicity Chairman, Technical Program Committee, Session Chair.
    - 1998: Technical Program Committee, Session Chair.
- *IEEE International Conference on Intelligent Transportation Systems (ITSC)*
    - 2013: Reviewer
    - 2011: Session Chair, reviewer.
    - 2009: Technical Program Committee, Special Session Organizer, Session Chair.
- *IEEE Workshop on Perception Beyond the Visible Spectrum*
    - 2014, 2015: Technical Program Committee.
- *IEEE Int'l. Workshop on Object Tracking and Classification Beyond the Visible Spectrum*
    - 2009, 2013: Technical Program Committee.
- *European Signal Processing Conference (EUSIPCO)*
    - 2015, 2016, 2017, 2018: Reviewer
- *45th IEEE Midwest Symposium on Circuits and Systems (2002)*: Session Organizer and Session Chair.
- *IEEE Asilomar Conference on Signals, Systems, and Computers*
    - 2000, 2001: special session organizer
- Presently serving or have served as a reviewer for *IEEE Transactions on Signal Processing*; *IEEE Transactions on Image Processing*; *IEEE Signal Processing Letters*; *IEEE Transactions on Pattern Analysis and Machine Intelligence*; *IEEE Transactions on Circuits and Systems II*; *IEEE Transactions on Communications*; *IEEE Transactions on Industrial Informatics*; *IEEE Transactions on Parallel and Distributed Systems*; *IEEE Transactions on Education*; *IEEE*

America – A; *IEE Proceedings – Vision, Image & Signal Processing*; *IEE Electronics Letters*; *EURASIP Journal on Applied Signal Processing*; *Journal of Electronic Imaging*; *Pattern Recognition Letters*; *Multidimensional Systems and Signal Processing*; *Signal Processing*.

▶ **Committee Assignments and University Service:**

- Committee A, School of Electrical & Computer Engineering (tenure and promotion/executive committee) (Aug 14 - Aug 16, Nov 04 - Aug 08)
- Chairman, Graduate Studies Committee, School of Electrical & Computer Engineering (Aug 08 - Jul 13)
- School of Electrical & Computer Engineering Graduate Liaison (Aug 08 - Jul 13)
- Graduate Studies Committee, School of Electrical & Computer Engineering (Aug 08 - Jul 13, Aug 97 - Aug 06)
- School of Electrical & Computer Engineering Undergraduate Program Committee (May 19 - May 20)
- Chairman, College of Engineering PP03 Faculty Task Force (Mar 12 - Apr 13) (task force to revise and rewrite policies and procedures for faculty tenure, promotion, annual evaluations, and workload)
- University of Oklahoma Conflict of Interest Advisory Committee (Aug 15 - present)
- University of Oklahoma Graduate Council (Aug 10 - Jun 13)
- College of Engineering E-Club Faculty Co-Advisor (May 00 - May 04), Advisor (May 04 - Jan 06) (*this is the largest student organization on the OU campus*)
- Faculty Senate (Aug 02 - May 05)
- College of Engineering Academic Misconduct Board and Grade Appeals Board (Jun 03 - Jun 05)
- Coordinator, Systems Area Faculty Interest Group (FIG) (Dec 08 - present, Oct 00 - Aug 02)
- School of Music piano faculty search committee (Sep 19 - present, Sep 16 - Dec 16, Sep 12 - Dec 12)
- School of Electrical & Computer Engineering Director Search Committee (Oct 04 - Jun 05)
- School of ECE Faculty Search Committee (97, 02, 03, 05, 06, 07, 14, 15, 17, 18)

▶ **Teaching:**

1/97 - present: School of Electrical & Computer Eng., University of OK, Norman, OK

- ECE2713, Digital Signals and Filtering (SP 18, SP 19, SP 20)
- ECE3223, Microcomputer System Design (FA 97)
- ECE3793, Signals and Systems (SP 97, FA 98, SP 99, FA 99, SP 00, FA 00, SP 01, SP 02, FA 02, SP 03, FA 03, SP 04, FA 04, SP 05, FA 05, SP 06, SP 07, SP 08, SP 15, SP 16, SP 17)
- ECE3960, Honors Reading (SP 00)
- ECE3980, Honors Research (FA 01, SP 02, SP 03, FA 11, SP 12, SP 19)
- ECE4213, Digital Signal Processing (FA 02, FA 06, FA 07, FA 08, FA 09, FA 10, FA 11, FA 12, FA 14, FA 15, FA 16, FA 17, FA 18, FA 19)
- ECE4973, Digital Image Processing (SP 98)
- ECE4990, Special Studies (various semesters SP 98 – present)
- ECE5213, Digital Signal Processing (FA 02, FA 06, FA 07, FA 08, FA 09, FA 10, FA 11, FA 12, FA 14, FA 15, FA 16, FA 17, FA 18, FA 19)
- CS5273, Digital Image Processing (SP 98, FA 00, SP 02, SP 03, SP 04, SP 05)
- ECE5273, Digital Image Processing (SP 98, FA 00, SP 02, SP 03, SP 04, SP 05, SP 06, SP 07, SP 08, SP 09, SP 10, SP 11, SP 12, SP 13, SP 14, SP 15, SP 16, SP 17, SP 18, SP 19, SP 20)
- ECE5973/ECE4973, Multimedia Communications (FA 98)
- ECE5973, Kalman Filtering (FA 99, FA 03, FA 05)
- ECE5980, Thesis Research (SP 99 – present)
- ECE5990, Special Problems (various semesters FA 97 – present)
- ECE6283, Advanced Image Processing (FA 04)
- ECE6973, Advanced Image Processing (FA 01)
- ECE6980, Dissertation Research (SP 00 – present)

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