Dr. Sayfe Kiaei

Electrical, Computer, and Energy Engineering
Endowed Chair Professor, IEEE Fellow
Ira A. Fulton Schools of Engineering
Arizona State University
Tempe, AZ 85287

DEGREES

Ph.D., Electrical and Computer Engineering, Washington State University, 1987. Ph.D. Dissertation: "VLSI Implementation of Recursive Filtering and Estimation Blocks"

M.S., Electrical and Computer Engineering, Washington State University, 1984. Specialization in Computer Engineering and VLSI.

B.S.E.E ., Electrical Engineering, Northeastern University/WSU, 1982.

INDUSTRIAL POSITIONS

1993-2002: Motorola Inc., Senior Member of Technical Staff, Personal Communication Sector, Austin, Texas.

Cellular Division: Platform Manager for RFIC Development, "Wireless Technology Center," PCS, Austin, Texas. (99-2002)

- **Near Field & Bluetooth C Development:** Responsible for the development of a single chip NFC and BT transceiver for the wireless handsets.
- **Wireless Transceiver System:** Designer and lead architect for the 2G and 3G mobile system transceiver.
- **GPS-E911 Receiver:** Leading a team for the development of assisted GPS receiver for the wireless handset.
- **2G, 3G Standards** Technical Representation and support of the standards teams in Various ITU, TIA, ETSI and Bluetooth standards.

Semiconductor Product Sector, ADSL Group, System & Architecture Engineering, Broadband Products Operations, Austin, Texas (97-99)

- **Broadband Wireline System Architecture:** Development of next generation broadband systems (ADSL, G.Lite) transceiver.
- **ADSL Transceiver:** Assisted in the development and completion of a single chip mixed-signal ADSL transceiver (***CopperGold***^{Tm}).
- **ITU/ETSI Standards:** Represented Motorola in DSL Telecommunication standards including T1E1, International Telecommunication Unit (ITU), ETSI, and the Universal ADSL Working Group (UAWG).

Motorola Land Mobile Products Sector, Plantation FL, and Austin Texas (93-97)

- **Baseband RF products DSP IC Engineer,** Responsible for the development of custom baseband IC for wireless digital two-way radios. The baseband IC contained custom DSP blocks, A/D and D/A, and audio PA. The baseband IC is used in the next generation

of digital two-way radios (new *"Talk about Radios"* announced Dec 99 at Las-Vegas consumer show), and in Japanese cellular systems (PHS).

- **DSP System Design:** Developed fully-automated design process using C, MATLAB, Synopsis, and CADENCE tools to reduce the design cycle time from DSP block specification to FPGA test, timing verification, layout, and custom gate implementation.

Member of Research Staff, Boeing Co., Bellevue, Wa, Flight Systems Research and Technology Center, summer. Design Engineer, Hardware and CAD tool development for system control.

ACADEMIC POSITIONS

2001-Present – Professor, and Director of NSF Wireless Research Center "Connection One", School of Electrical, Energy, and Computer Engineering, Arizona State University, Tempe, AZ, 85287.

- Professor, Research and Teaching in Communication System, Wireless and Wireline transceiver, RF Integrated circuits, mixed-signal and Analog circuits.
- Director, Connection One NSF Center. Established the center in 2002 with focus on Integrated Communication and Computer Circuits and Systems. The Center started with ASU as the lead in 2002 with 6 industrial members, and has grown to 5 universities (ASU as the lead, U of Arizona, Ohio State University, RPI, and U of Hawaii) and over 20 industrial members with annual funding over $1.5M. See www.connectionone.org for more details.
- Research Projects funded by DARPA, JPL/NASA, Motorola Inc., Intel Inc., Broadcom, Qualcomm, Raytheon, General Dynamics, Texas Instruments, and over 10 other industry.
- Graduated over 100 PhD and MS students working in industry, academia, and research labs.

2008-2012: Associate Dean of Research, Ira A. Fulton Schools of Engineering, Arizona State University, Tempe, AZ, 85287

Responsible for identifying research opportunities, developing and strengthening collaborations with industry and government, and assisting faculty in building and maintaining strong research programs. Associate Dean for Research (ADR) is responsible for leading the research infrastructure, promoting and developing collaborative research programs, leading large multi-university proposals, investing and providing seed funding to grow new research areas, and graduate program.

1998-2000, Adjunct Professor, Electrical and Computer Engineering Dept., The University of Texas, Austin, Texas

- Taught evening graduate courses at UT Austin in Introduction to Telecommunication System and Digital Communications.
- Co-advised two Ph.D. program committees in IC design and Telecomm (While working at Motorola)

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1987-1993, Associate Professor (Tenured) Electrical and Computer Engineering Department, Oregon State University, Corvallis, OR

- Taught classes in VLSI system design, Electronics, DSP, Communications, and Wireless systems. Graduated 30 MS and Ph.D. students. Research in VLSI & DSP, mixed-signal IC design, communication.
- Faculty Chair, Computer Engineering Program, Developed a new Computer Engineering Program at ASU in 1987, working with the Department Chair and the Dean of Engineering to hire 8 new faculty, developed new classes in computer architecture, computer arithmetic, VLSI, array and parallel processing, and related area.

1987-1995, Co-Director, NSF Center for the Design of Analog/Digital IC's (CDADIC),

- *CDADIC* is a National Science Foundation University-Industry research center (UIRC) focused on mixed-signal IC research. Assisted in the establishment of the center in 1987 with Washington State University. Attracted several new industrial members and NSF to the center. Responsible for managing the research funds, assisted in the evaluation of new research projects, and was a liaison between the industrial members and the universities for technology transfer. *CDADIC* members include four universities (*Oregon State University, University of Washington, Washington State University, University of N.Y. Stony Brook*), over 25 Electronics companies, and the National Science Foundation. The annual research budget is over one million dollars.

Post Doctoral Lecturer, Electrical and Computer Engineering, Washington State University.

1982-1987, Research & Teaching Assistant, Washington State University

EXPERT WITNESS, IP Cases

Representative Cases:

1. 2014-15 NFC TECHNOLOGY LLC, Plaintiff, Vs. HTC AMERICA, INC., ET AL., Perkins Coie LLP, Representing HTC America, Area: Wireless Near Field Communication System, Wireless Near Field Communication System.
2. 2014-15 CUSTOMPLAY, LLC - Vs. CLEARPLAY, INC. BEUS GILBERT PLLC, Representing Clearplay – Area: Wireless Video
3. 2014-2015 "INTERDIGITAL COMMUNICATIONS Vs . HUAWEI - Wilson Sonsini Goodrich & Rosati - Representing Interdigital Wireless Comm, 1G-4G, LTE, UMTS, Standard, Licensing
4. 2012-2013 "Technology Properties Limited LLC And Acer, Agility IP Law Expert - Representing TPL LLC - Area: Wireless System, Microprocessor Circuits, VLSI, Clock Circuits.
5. 2009-2012 Triquint Semiconductor, Inc. V. Avago Technologies Liminted, Perkins & Coie - Representing Triquint – Area: Radio Frequency RF Circuits, Wireless System, RF System And Filter, BAW Filters
6. 2007-2009 Loya Vs. City Of Tempe, Gallagher & Kennedy, P.A.- Representing Loya Area: Wireless Comm. Circuits

7. 2007-2009 Comtech EF Data Corporation And Paradise Datacom, Sanders & Park - Representing Comtech RF Data - Trade Secret On Satellite Communication
8. 2007-2011 Wi-LAN, Inc. Vs. Wesrell Technologies, Mckool Smith, Representing Wilan DSL Modem, Communications, Signal Processing
9. 2006-2007 M. Flom Vs. M. Schaefe, JEPE Entrekin Law Firm- Representing Flom area: RF Lab and Wireless Standards lab
10. 2005-2008 (Confidential - Under Protective Order) Certain Mobile Tel Handsets Wireless Comm Devices & Comp. Inv. No. 337-TA-578, Mcdermott Will & Emery LLP, Representing Qualcomm Inc. Area: 3G, 3GPPP, Wireless Comm. System, RF And Analog Circuits
11. 2006-2007 Comtech EF Data Vs. RADYNE Corp. Sanders & Parks, Representing Comtech RF Data Satellite Comm. Area: Circuits, RF System And Circuits,

CONSULTANT

- **Boeing Commercial Aircraft, BCAC, Renton, WA - 1985-1987**
  - Development of Airplane Controller Model, Simulation and Implementation of Flight control, Model reduction, and system control.
- **Tektronix Inc, Beaverton, OR - 1988-1990,**
  - Design and Implementation of Data acquisition system for Spectrum analyzer, development of custom DSP algorithm for the Tektronix spectrum analyzer including system architecture, simulation, analysis, and design of oversampled data acquisition system.
- **Hewlett Packard, Corvallis, OR – 1990-1993**
  - Various project on development of custom analog and digital IC's for printer and inkjet system. Some of this work was under consultation, and some under various research grants with Oregon State University.
- **Motorola Inc., Austin, Texas, 2000-2002**
  - Supporting development of E911 and GPS integrated circuits and systems for the cellular and mobile handsets. This includes development of GPS algorithms, analysis of GPS system and Cellular Phone GPS implementation.
- **Sony Inc., San Diego, CA, 2002-2004**
  - Review and development of various telecom cellular system architecture including 3G system architecture, and GPS system. Working with Sony Semiconductor at San-Diego and Tokyo on the development of GPS and Near field / Bluetooth for the wireless handset.

AWARDS

- IEEE Fellow, For contributions in Mix-Signal Design, 2001
- IEEE Fellows CAS Committee Chair
- Global Standards Award, For contributions in the International Telecommunication Unit (ITU) for Asymmetric Digital Subscriber Line (ADSL) G.Lite Standards. Motorola Inc., 1999.
- 10X Cycle Reduction Award, for development of new IC design process from DSP algorithm to IC layout, Motorola Inc., 1995.

- IEEE Darlington Award, IEEE Circuits and Systems Society Best Paper Award, 1995. For "Characterization and Comparison of CMOS FSCL Circuits with Conventional CMOS for mixed-signal ICs," Published at: *IEEE Trans. on Circuits and Systems II, Sept. 93*.
- Carter Best Teaching Award, College of Engineering Best Teacher Award, Oregon State University, 1992. For *"outstanding and inspirational teaching in the College of Engineering"*. Award is selected by the confidential vote of all of the undergraduate students in the College of Engineering among over 125 professors in the College.
- Industrial University Fellowship (IUF) Award, National *Science Foundation*, 1993.
- Research Initiation Award, *National Science Foundation*, 1990-93.
- Outstanding Graduate Student Scholarship, Azur-*Data Inc*. WSU, 1984

PROFESSIONAL RECOGNITION

- IEEE Fellow, 2002-Present
- IEEE Fellow Committee Chair, CAS, 2008-2010
- IEEE Fellow Committee member, 2007-2010.
- IEEE Senior Member, 1993-Present, IEEE Member 1987-1992.
- IEEE Faculty Advisor, Oregon State University, 1987-1990

IEEE Editorials & Conference Activities

- Editor and Associate Editor for IEEE Microwave Magazine, IEEE System Journal, IEEE Transactions on VLSI, IEEE Comm. Magazine, IEEE Transactions on Microwave Theory and Techniques, IEEE Transactions on Circuits and Systems-II , *IEEE ASIC/SOC Conference, IEEE RF Integrated Circuits Synposium, IEEE Communications, Tutorial & Surveys Magazine.*
- RFIC Executive Committee members, Technical Program Chair for IEEE International Sym. on Circuits and Systems, ISSCC Admin Council, General Chair for Radio Frequency IC (RFIC), Technical Program Chair for RFIC Symposium, General Chair, Int. Sym. on Low-Power Electronics and Design (ISLPED), Executive Committee Member, Int. Symp. On Low-Power Electronics and Design, etc.

Invited talks, Panelist, Session Chairs, Workshop Speaker

- Various workshops in RFIC, ISCAS, and VLSI from 1990-present.

PATENTS, PUBLICATIONS

Patents & Disclosures

1. Finite impulse response digital to analog converter, US Pat. 7528754 - Filed Feb 8, 2007 - Issued May 5, 2009
2. Efficient non-iterative frequency domain method and system for ..., US Pat. App 11489102 - Filed Jul 19, 2006

DOCKET ALARM

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