

EDUCATION	Doctor of Philosophy (Ph.D.) Expected May 2011 <i>Institution</i> The University of Texas at Austin <i>Major</i> Electrical and Computer Engineering <i>Advisor</i> Prof. Brian L. Evans
	Master of Science (M.S.) May 2008 <i>Institution</i> The University of Texas at Austin <i>Major</i> Electrical and Computer Engineering <i>Advisor</i> Prof. Brian L. Evans <i>GPA</i> 3.97 / 4.0
	Bachelor of Technology (B.Tech.) May 2004 <i>Institution</i> Indian Institute of Technology, Guwahati <i>Major</i> Electronics and Communication Engineering <i>CPI</i> 8.81 / 10.0 <i>Thesis</i> Source Localization and its Utilization in Downlink Beamforming
WORK EXPERIENCE (FULL-TIME)	Texas Instruments (India) Pvt. Ltd., Bangalore, India July'04 – July'06 <i>Design Engineer</i> <ul style="list-style-type: none">Advanced Image/Video Display Controller design for OMAP™ processorHigh Performance Memory Subsystem design for C55x DSP Core
WORK EXPERIENCE (PART-TIME)	Qualcomm, San Diego May'10 – Aug'10 <i>Systems Engineering Intern</i> <ul style="list-style-type: none">Linear multi-user detection for TD-SCDMA
	Intel Corporation, Santa Clara May'08 – Aug'08 <i>Hardware Engineer Intern</i> <ul style="list-style-type: none">Bluetooth and GPS baseband implementation and validation on a state-of-art prototype of a reconfigurable radio baseband architecture
	Intel Corporation, Santa Clara June'07 – Aug'07 <i>Hardware Engineer Intern</i> <ul style="list-style-type: none">DVB-H baseband receiver implementation and validation on a state-of-art prototype of a reconfigurable radio baseband architecture
	Embedded Signal Processing Laboratory, UT Austin Jan'07 – Present <i>Research Assistant</i> <ul style="list-style-type: none">Mitigation of radio frequency interference generated by computation platforms
	Signal Theory Group, Ruhr-University Bochum, Germany May'03 – July'03 <i>Research Assistant, (on DAAD scholarship for Practical Traineeship)</i> <ul style="list-style-type: none">Antenna Array Processing, Parameter Estimation
TEACHING EXPERIENCE	The University of Texas at Austin Aug'06 – Dec'06 <i>Teaching Assistant, EE464 Senior Design Project, Fall 2006</i>
HONORS AND AWARDS	<ul style="list-style-type: none">Best paper award, IEEE Computer Society Annual Symposium on VLSI (ISVLSI), May 2009, Tampa, Florida, USA (co-author)Represented India at the SEARCC International Software Programming Contest held at Darwin, Australia in July 1998. I was the leader of the three-member team and was ranked second at the preliminary All India CSI programming contest

- Awarded **first** position in the **All India Software Development** and Display contest held at Modern School, Vasant Vihar, India
- Awarded certificate of appreciation for “*Outstanding Execution and surpassing PPAS goals for DISPC 2.3*”, August 2005, Texas Instruments (India) Pvt. Ltd.

RESEARCH INTERESTS

- Signal Processing for Communications
 - Signal processing in the presence of non-Gaussian impulsive noise
 - Antenna Array Processing, Parameter Estimation, MIMO Communications
- VLSI Signal Processing
 - Architecture and algorithm development for wired/wireless communication systems

PUBLICATIONS

Journal Articles

K. Gulati, B. L. Evans, J. G. Andrews and K. R. Tinsley, “Statistics of Co-Channel Interference in a Field of Poisson and Poisson-Poisson Clustered Interferers”, *IEEE Transactions on Signal Processing*, accepted for publication

M. Nassar, **K. Gulati**, M. R. DeYoung, B. L. Evans and K. R. Tinsley, “Mitigating Near-Field Interference in Laptop Embedded Wireless Transceivers”, *Journal of Signal Processing Systems*, Mar. 2009, invited paper.

Conference Papers

K. Gulati, B. L. Evans, and K. R. Tinsley, “Statistical Modeling of Co-channel Interference in a Field of Poisson Distributed Interferers”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Proc.*, Mar. 14-19, 2010, Dallas, Texas USA.

K. Gulati, A. Chopra, B. L. Evans, and K. R. Tinsley, “Statistical Modeling of Co-Channel Interference”, *Proc. IEEE Int. Global Communications Conf.*, Nov. 30-Dec. 4, 2009, Honolulu, Hawaii.

A. Chun, K. McCanta, E. B. Sandoval, and **K. Gulati**, “Overview of the Scalable Communications Core: A Reconfigurable Wireless Baseband in 65nm CMOS”, *Proc. IEEE Symposium on VLSI*, May 13-15, 2009, Tampa, Florida, USA.
(Received best paper award at conference)

A. Chopra, **K. Gulati**, B. L. Evans, K. R. Tinsley, and C. Sreerama, “Performance Bounds of MIMO Receivers in the Presence of Radio Frequency Interference”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Proc.*, Apr. 19-24, 2009, Taipei, Taiwan.

K. Gulati, A. Chopra, R. W. Heath, Jr., B. L. Evans, K. R. Tinsley, and X. E. Lin, “MIMO Receiver Design in the Presence of Radio Frequency Interference”, *Proc. IEEE Int. Global Communications Conf.*, Nov. 30-Dec. 4th, 2008, New Orleans, LA USA.

M. Nassar, **K. Gulati**, A. K. Sujeeth, N. Aghasadeghi, B. L. Evans and K. R. Tinsley, “Mitigating Near-Field Interference in Laptop Embedded Wireless Transceivers”, *Proc. IEEE Int. Conf. on Acoustics, Speech, and Signal Proc.*, Mar. 30-Apr. 4, 2008, Las Vegas, NV USA.

M. Pesavento, **K. Gulati** and J. F. Böhme, “Estimating Parameters of Two-Dimensional Damped Exponential Mixtures”, *Proc. IEEE Symp. on Signal Proc. and Info. Tech.*, 2003, pages 455-458, Darmstadt, Germany, Dec. 14-17, 2003.

TECHNICAL REPORTS

Kapil Gulati, Marcel Nassar and Brian L. Evans, “In-Platform Radio Frequency Interference Mitigation for Wireless Communications”, *Technical Report*, The University of Texas at Austin, Austin, Texas, May 15, 2007

<http://users.ece.utexas.edu/~bevans/projects/rfi/reports/RFIReportSpring2007.doc>

SOFTWARE RELEASES

Kapil Gulati, Marcel Nassar, Aditya Chopra, Ben Okafor, Marcus R. DeYoung, Navid Aghasadeghi, Arvind Sujeeth, and Brian L. Evans, "Radio Frequency Interference Modeling and Mitigation Toolbox in MATLAB", copyright © 2006-2010 by The University of Texas.

- Simulation environment for generating radio frequency interference and quantifying the performance of parameter estimation and interference mitigation algorithms
- Consists of 50+ files containing 9,632 lines and 407 kB of MATLAB source code
- Version 1.5 (August 15, 2010) is available at <http://www.ece.utexas.edu/~bevans/projects/rfi/software>

MAJOR PROJECTS

- RFI Mitigation Algorithm Development and Matlab Toolbox
The University of Texas at Austin *January 2007 – Present*
- Cache Aware Clustering of Synchronous Dataflow Graphs on Multiprocessors
Class Project, The University of Texas at Austin *September 2007 – Dec 2007*
- Design of a CORDIC SVD Processor IP
Class Project, The University of Texas at Austin *September 2006 – Dec 2006*
- Advanced Image/Video Display Controller design for OMAP[™] processor
Texas Instruments, India *December 2004 – August 2006*
- High Performance Memory Subsystem design for C55x DSP Core
Texas Instruments, India *July 2004 – December 2004*
- Source Localization and its Utilization in Downlink Beamforming
Undergraduate thesis, IIT Guwahati *August 2003 – May 2004*
- Computationally efficient source localization in sensor arrays
Summer Internship, Ruhr-University, Germany *May 2003 – July 2003*
- Design and Hardware Implementation of the OQPSK Modulator
Junior year Design Project, IIT Guwahati *February 2003 – April 2003*
- 4.8 kbps Code Exited Linear Predictor (CELP) Coder
IIT Guwahati *December 2002 – January 2003*
- Multiresolution analysis of Images using Wavelets
Junior year project, IIT Guwahati *September 2002 – November 2002*

SKILLS

Programming Languages	C, C++, Basic (Visual/Gw/Q), Perl, TCL/TK
VLSI Design	Languages: VHDL, Verilog EDA Tools: Synopsys Design Compiler/ Power theater/ Power compiler, RTL compiler, Cadence ICFB, HSPICE, ModelSim, VCS, Formality, LEC, Specman, Xilinx (FPGA)
Algorithm Development	MATLAB, LabVIEW, VDSP (ADSP), Code Composer Studio (TI), Electronic Workbench
Development Platforms	Microprocessor 8085/8086, ADSP-218x, TMS320C54xx
Operating Systems	Linux / Unix, Windows

RELEVANT COURSES

Probability and Stochastic Processes	Stochastic Optimization
Digital Signal Processing	Information Theory
Advanced Digital Signal Processing	Time Frequency Analysis
Digital Communications	VLSI-I
Advanced Wireless Communications	VLSI Communication Systems
Advanced Space-Time Communications	Computer Architecture
Estimation Theory	Principles of Computer Architecture
Coding Theory	Engineering Programming Languages

PROFESSIONAL ACTIVITIES

- Reviewer for the following journals and conferences
- *IEEE Transactions on VLSI* (2007 – present)
 - *IEEE Communication Letters* (2009 – present)
 - *IEEE Transactions on Vehicular Technology* (2010 – present)
 - *IEEE Int. Global Communications Conf.* (2008 – present)

- *IEEE Int. Conf. on Acoustics, Speech, and Signal Proc.* (2007 – present)
- *IEEE Int. Conf. on Communications* (2008 – present)
- *IEEE Int. Conf. on Distributed Smart Cameras* (2009)
- *IEEE Int. Workshop on Signal Processing Systems* (2008 – present)

VISA STATUS F1 Student Visa (with work permission in the US)