

EDUCATION

University of Central Florida Orlando, FL
PhD, Electrical Engineering, Summer 2010

University of Central Florida Orlando, FL
Master of Science, Electrical Engineering, Summer 2007
Area of Emphasis: RF and Microwave Microelectronics Design and Fabrication
Thesis Title: *Ultra-Wideband Orthogonal Frequency Coded SAW Correlators*

Bachelor of Science, Electrical Engineering, August 2003
Senior Project: *MP3 CD Changer Emulator*

EXPERIENCE

University of Central Florida Orlando, FL
Consortium for Applied Acoustoelectronic Technology / AMPAC
Graduate Research Assistant 8/2003 – Current

- Surface Acoustic Wave (SAW) device design and modeling using MathCAD and Matlab based Coupling of Modes (COM) modeling.
- Fabrication of Surface Acoustic Wave Devices using monolithic photolithography processes.
- Fabrication of contact photolithography masks using CAD layout and Interserv Pattern Generator.
- Device parameter acquisition using Automatic Network Analyzer and Cascade RF probing station.
- Design and fabrication of Mini-modular RF Oscillator at 160MHz. The design methodology and results were published.
- Formal JEOL 6400F SEM (Scanning Electron Microscopy) Training.
- Advanced Materials Processing and Analysis Center (AMPAC) cleanroom laboratory monitor.
- Instructor for NASA microfabrication short-course – July 2007.

College of Electrical Engineering and Computer Science
Graduate Teaching Assistant 8/2003 – Current

- Fabrication of Solid State Devices (EEL5355) — Lab Instructor
This laboratory aimed to expose students to the many aspects of semiconductor processing in the clean room environment. Through my instruction, the students produced functional MOSFET and BJT devices from bare silicon wafers; ultimately measuring the devices using DC probe stations and curve tracers.
- RF and Microwave Communications (EEL5555) — Lab Instructor and Grader
Introduced students to RF and microwave active circuits, matching networks, microstrip amplifier and oscillator design and fabrication. Also, familiarization with network and spectrum analyzers.
- Electrical Networks (EEL3123) — Lab Instructor

Siemens Information & Communication Networks Lake Mary, FL
Quality Engineering Co-Op 11/1999 – 9/2003

- Perform Root Cause Analysis & Material Evaluation Lab testing to fulfill technical action requests.
- Develop and maintain databases and software tools using platforms such as Microsoft Access, Lotus Notes and Domino Server to yield process improvements for material rejection and supplier analysis.
- Provided support to manufacturing regarding product quality issues which required corrective actions.
- Employ problem solving and decision making techniques to effectively identify and resolve problems.
- Setup and operation of Christopher NSpec automated assembly inspection system for manufacturing during introduction of technology. Provided an estimated 77% cost savings to inspection process.
- Programmed the Intermec Janus wireless barcode scanner and terminal emulation for TCP/IP use.
- Involved with facility's ISO 9001 and TUV TL9000 quality certifications.

Central Florida Consulting Surveyors*Surveyor*

Maitland, FL

4/1998 – 10/1999

- Gained in-field experience of construction site layout and other land surveying tasks.
- Performed as-built, mortgage, and building construction surveys.

Florida Computer Company*Computer Technician*

Sanford, FL

1/1998 – 10/1998

- Built, repaired and upgraded Personal Computers and components.

COMPUTER SKILLS

Engineering Tools: Matlab, MathCAD, PSpice, MultiSIM, PCB Layout (Eagle, P-CAD), Visio**Programming:** Visual Basic, VBA, C, C++, Access, SQL, ASP, HTML, Flash, Java, JavaScript**Applications:** L^AT_EX, Xfig, MS Office, Adobe CS3, Lotus Notes, SAP; Windows, DOS, Linux, OSX

AFFILIATIONS

- Institute of Electrical and Electronics Engineers (IEEE) Member
- IEEE Ultrasonics, Ferroelectrics, and Frequency Control (UFFC) Society Member
- Eta Kappa Nu (ECE Honor Society)

AWARDS AND HONORS

NASA GSRP Fellowship, 2007 (\$30k/yr)

I²Lab PhD Fellowship, 2007 (\$25k)

IEEE IFCS Student Poster Competition Finalist, 2006

UCF President's Honor Roll

AP Scholar with Honor, 1999

UCF Undergrad to Grad Fellowship, 2003 (\$10k)

BSA Eagle Scout, 1998

UCF Dean's List

Florida Bright Futures Scholar, 1999

PUBLICATIONS

D. R. Gallagher, D. C. Malocha, D. Puccio and N. Lobo, "Orthogonal Frequency Coded Filters for Use in Ultra Wide Band Communication Systems," *IEEE Transactions on Ultrasonics Ferroelectrics and Frequency Control*, vol. 55, no. 3, Mar. 2008, pp. 696–703

D. R. Gallagher, N. Y. Kozlovski and D.C. Malocha, "Ultra Wide Band Communication Systems using Orthogonal Frequency Coded SAW Correlators," in *Proceedings – IEEE Ultrasonics Symposium*, Vancouver, BC, October 2006, pp. 1075–1078 — (Presented as lecture)

D. R. Gallagher and D.C. Malocha, "Orthogonal Frequency Coding for Use in Ultra Wide Band Communications and Correlators," in *Proceedings – IEEE Frequency Control Symposium*, Miami, FL, June 2006, pp. 494–499 — (Presented as lecture and poster)

N. Kozlovski, D. R. Gallagher, and D.C. Malocha, "Design of Mini-Modular Oscillators using RF and Microwave Design Techniques," in *Proceedings – IEEE Frequency Control Symposium*, June 2006, pp. 351–357

D. Puccio, D.C. Malocha, N. Saldanaha, D. R. Gallagher, and J. Hines, "Orthogonal Frequency Coding for SAW Tagging and Sensors," *IEEE Transactions on Ultrasonics Ferroelectrics and Frequency Control*, vol. 53, no. 2, Feb. 2006, pp. 377–384

D. Malocha, D. Puccio, and D. Gallagher, "Orthogonal Frequency Coding for SAW Device Applications," in *Proceedings – IEEE Ultrasonics Symposium*, vol. 2, Aug. 2004, pp. 1082–1085

D. Puccio, D. Malocha, D. Gallagher, and J. Hines, "SAW Sensors using Orthogonal Frequency Coding," in *Proceedings – IEEE International Frequency Control Symposium*, Aug. 2004, pp. 307–310

CITIZENSHIP

United States