James 'Trip' Humphries

CONTACT INFORMATION

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CLEARANCE

DoD Secret (NACLC) - July 2008

EDUCATION

University of Central Florida, Orlando, FL USA

Ph.D., Electrical Engineering, (Expected: May 2015)

- Dissertation Topic: "Passive, Wireless Surface Acoustic Wave Strain Sensor"
- NASA Graduate Student Researchers (GSRP) Fellowship

University of Central Florida, Orlando, FL USA

M.S., Electrical Engineering, (Expected: December 2012)

University of Central Florida, Orlando, FL USA

B.S., Electrical Engineering, December, 2010

- Honors in the Major (Undergraduate Thesis): "A Novel Approach for Extending Delay Time in Surface Acoustic Wave Devices"

EXPERIENCE

University of Central Florida, Orlando, FL USA

Graduate Research Assistant **January 2010 - Present**

Design, fabrication, and testing of surface acoustic wave (SAW) devices and sensors with the Consortium for Applied Acoustoelectronic Technology (CAAT). Experience in a clean room device fabrication using a mask pattern generator, Karl Suss mask aligners, and e-beam metal evaporation chambers. Testing and data processing accomplished with vector network analyzers (VNA), RF probing stations, and software such as Matlab and MathCAD.

Graduate Teaching Assistant **Various Semesters**

Assignment and test grading provided to professor as well as course preparation support.

- Semiconductors (EEE 3350) - Grader - Spring 2011, Fall 2012

RS&H, Merritt Island, FL USA

Electrical Engineering Intern **August 2008 - August 2009**

Supported design processes for development of space launch facilities as well as office and industrial buildings. Responsibilities included CAD development in AutoCAD and ProEngineer (ProE), cost estimates, design calculations (power, voltage drop, lighting, etc.), and construction support.

Simulation and Training Technology Center, Orlando, FL USA

Engineering Intern **May 2008 - August 2008**

Provided support to engineers developing simulation tools for training the U.S. Army. Responsibilities included software testing, simulator demos, and simulator hardware and software support.

Carl Black Buick Pontiac GMC, Orlando, FL USA

E-Commerce Support **June 2007 - October 2007**

Worked in the internet sales department to optimize online advertisement campaigns for the dealership. Responsibilities included Google Adwords campaign creation and monitoring, search engine optimization (SEO) in Google and Yahoo, and minor website modifications and corrections.

Experience (Continued)

eLEAD CRM, Orlando, FL USA

Technical Support **May 2005 - August 2006**

Provided technical support for customer relationship management (CRM) software designed to optimize lead tracking and sales at car dealerships. Responsibilities included technical support (phone and e-mail) to end users, software debugging, and data mining.

Publications

Humphries, J. R.; Malocha, D. C.; , "Passive, Wireless SAW OFC Strain Sensor," Frequency Control Symposium (FCS), 2012 IEEE International , vol., no., pp.1-6, 21-24 May 2012

Conference Lectures

IFCS 2012 - "Passive, Wireless SAW OFC Strain Sensor"
Presented theory, fabrication, and demonstration of a passive, wireless strain sensor based on SAW technology and orthogonal frequency coding (OFC).

Honors and Awards

IEEE IFCS Student Paper Competition Finalist, 2012

NASA GSRP Fellowship ($30k/yr), 2011 - 2014

IEEE Microwave Theory and Techniques Society Undergraduate Scholarship ($1.5k), 2010

Computer Software Skills

- **Engineering and Modeling:** Matlab, MathCAD, MultiSIM, HFSS, ADS, AutoCAD, Xilinx, COMSOL
- **Programming Languages:** C, HTML
- **Applications:** MS Office, LaTeX, MathType
- **Operating Systems:** Windows, OSX, Linux

Equipment Experience

- Electromask Pattern Generator
- Karl Suss Mask Aligner
- E-Beam Metal Deposition Vacuum Chamber
- Plasma Asher
- Class 100 & 1000 Clean Room Facilities
- Vector Network Analyzers (VNA)
- RF Probe Stations
- Wafer Dicing Saw
- Gold Wire Bonder

Relevant Coursework

- Fabrication of Solid State Devices
- Surface Acoustic Wave Devices
- Microwave Engineering
- RF and Microwave Communications
- Biomedical Sensors
- Optoelectronics
- Semiconductor Lasers
- Introduction to RADAR