Mason Earl Nixon

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OBJECTIVE: To apply my knowledge and skills in the field of electrical engineering with emphasis in wireless technologies and control systems.

EDUCATION

Institution	*Dates*	*Degree*	*Notables*
Auburn University at Montgomery	Spring '06 - Summer '08	N/A	**Dean's List** Spring 2006 to Spring 2008 **Final GPA: 3.89**
Auburn University	Fall '08 – Spring '11	B.S. Wireless & Electrical Engineering May '11	**Summa Cum Laude** **Ranked 1st in Electrical Engineering Class'11** **Dean's List** Spring 2009 to Spring 2011, **Final GPA: 3.89**
Georgia Institute of Technology	Fall 2011 – Present	Anticipating a M.S. in Electrical Engineering '13	**Focus Areas: Controls & Electromagnetics**

EXPERIENCE (REMUNERATED)

Department of Defense (DoD) Space and Missile Defense Command (SMDC) Concepts Analysis Lab (CAL) *General Engineer Contractor*	**May '10 – Aug. '10** – Designed and analyzed a free space optical data transmission system for a satellite-to-ground link. Worked on various other projects involving satellites and lasers. Also performed simulation and interpretation with MATLAB and Google Earth. This job requires a security clearance at the level of **SECRET** which was obtained in April 2010. **May '11 – Aug. '11** – Aided in the design of a high-altitude balloon payload that acted as a simulated satellite. The payload included: Atmel microcontroller, GPS IC with helical antenna, temperature sensors, accelerometer, gyro, and a 900 MHz transceiver. I also operated and logged data from an interferometer radar that acted as the sole truth sensor in a field test of multiple radars in detecting rockets, artillery, and mortar. **May '12 to Aug. '12** – Led a team of 7 interns in rebuilding a remote controlled gun turret demonstration used to interest high school students in engineering. Using a webcam, wrote a computer vision algorithm to detect the position of a target. Developed a tracking algorithm that could predict simple motion of the target to intercept it. Led a team of 3 in developing a graphical software version control. Worked with the Space group at SMDC to develop a logging tool for satellite passes. Completed the task promptly and was then given the task of designing a tool to determine which direction to point the ground station to receive data from the satellite. Once the program is completed, it will internalize a process that currently costs the command upwards of $600,000.
M.C. Dean Inc. *Design Engineer Intern*	**May '09 – Aug. '09** – Aided other Design Engineers in designing security and control access systems with extensive use of AutoCAD 2009. Revised projects to work with an infrastructure maintenance management system and helped design control access systems. Also performed quality control and revision of design submissions. It is notable that the projects that were handled contained sensitive information.
Alabama Department of Transportation (ALDOT) Materials & Tests Bureau Liquid Asphalt Lab *Professional Civil Engineer Trainee*	**Aug. '07 – Aug. '08** - Performance of a wide variety of liquid asphalt and plastics tests in addition to asphalt disposal. Tests involve use of equipment such as Dynamic Shear Rheometer, Brookfield Viscometer, Saybolt Viscometer, Ductilometer, etc. Performed distillations of Pavon and various other emulsion types of asphalt. Wrote lab contract proposals, test failure reports, and created lab floor plan.

EXPERIENCE (VOLUNTEER)

AUM Engineering Club *President & Co-founder*	**Jan. '08 - Aug. '08** - Began and oversaw team projects with teams of 5 or more on such tasks as the conversion and implementation of petroleum-burning vehicles into ethanol burning vehicles into the AUM fleet, biodiesel vehicle conversion, and campus wide recycling.
AU Student Projects and Research Committee (SPaRC) *Project Manager*	**Jan. '09 - May '11** – Delegated and aided a team of 12+ students in the design of chassis, drive systems, power systems, and control systems of an autonomous solar-powered robot for the IEEE Hardware Design competition. Notable experience gained on microcontrollers such as the Arduino, Motorola HCS12, and the PIC 16 bit. Experience gained in construction of solar cell arrays and power systems. Also constructed and demonstrated a guitar effect clone.

NOTABLE ACADEMIC ACHIEVEMENTS

Scholarships

- Academic Excellence Merit Scholarship 2007 to 2008
- AU Board of Trustees Scholarship 2008 to 2009
- Bonnie H Arnall Endowed Scholarship 2008 to 2009
- National SMART Grant 2008 to 2010
- Class of 1908 Scholarship 2008 to 2009
- AT&T Foundation Scholarship 2008 to 2011 (out of 2700 applicants)
- Electrical Engineering Annual Faculty Scholarship 2010 to 2011
- Recipient of Cellnet Technology ($12,000) Annual Scholarship 2009 to 2010

Competitions

- Engineering Wifi Antenna Design Team Competition Winner (2007)
- Radar Tracking Algorithm Design Team Winner (2010)

Honor Societies& Affiliations

- Innovative Humanitarian Products Organization – Vice-President Spring 2010 to Spring 2011
- IEEE AU Student Branch – Officer Spring 2009 to Spring 2011
- Eta Kappa Nu – Officer Fall 2009 to Spring 2011
- Tau Beta Pi – Officer Spring 2010 to Spring 2011
- National Society of Collegiate Scholars – Spring 2009 to Spring 2011
- AU Engineering Council – Representative Fall 2009 to Spring 2011

General

- Honored in recognition of Outstanding Research in Alternative Fuels (2008)
- Accepted the Department of Defense SMART Scholarship and Internship out of 1500 nationwide applicants (2009) and out of 2700 nationwide applicants (2011)
- Honored with IEC Everitt Award for Student Excellence (2010-2011)

SPECIAL SKILLS

Software	*Hardware*
• MATLAB 2012b with Simulink experience • AutoCAD 2009 • C++ / Visual C++ (.NET 4.0 Framework) • OpenCV C++ library ver. 2.3 • C# (.NET 4.0 Framework) • HTML, JavaScript, Cascading Style Sheets, & XML • Adobe Photoshop CS3 • 2010 Microsoft Office Suite	• HCS12 Motorola Microcontroller assembly • Atmel microcontrollers with Arduino bootloader • Able to type sixty words per minute