

Marc Philip Kessler

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SUMMARY:

Proactive MS EE graduate student with a broad knowledge base and strong interests in DSP, communications and embedded systems development. Experienced in hardware and low-level software development with a desire to move into communication theory and protocol development for next generation applications. Strong ethics. Effective at producing results either in teams or alone. Familiar with many programming languages and a quick learner allowing for easy adaptation to many tasks.

EDUCATION:

University of Colorado at Boulder, Boulder, CO 80310, USA

MS Electrical Engineering 5/2007 GPA: 3.72

BS Electrical Engineering 12/2005 GPA: 3.65 EE, 3.55 Overall

SSBI:

June 18th, 2004 - Active

SKILLS:

- Group leader. Proactive and self-motivated, requiring minimal direct guidance.
- Plan and execute complex and interdependent schedules. Team player.
- Expert Motorola DSP56300, DSP, Embedded Systems, PICs, 80x86 Assembly, VHDL, Verilog
- Matlab, Mathematica, Spice, Electronic Work Bench
- Digital Signal Processing, Circuit Analysis, Analog Filters, PCB Design/Layout
- C, C++, C#, HTML, Perl, Visual Basic Scripting/Macros
- Networking, Active Directory
- Expert MS Office & Windows, Linux/Solaris

WORK EXPERIENCE:

Massachusetts Institute of Technology Lincoln Laboratory
Lexington, MA 6/2006 – 8/2006

Graduate Intern

Intern with Group 64, Advanced Satellite Communications. Worked closely with group members to determine requirements to independently develop, design, and implement a system for the automated testing of satellite emulation hardware. Developed VHDL for implementation on an FPGA and designed a custom circuit board to interface with the emulation system and intelligently check it for hardware failures. Testing system provides detailed information on hardware failures in 125ms, improved over the previous long, manual process.

University of Colorado at Boulder EE Dept
Boulder, CO 1/2006 – 5/2006

Digital Signal Processing Lab TA

Teaching Assistant for DSP Lab. Worked closely with students to troubleshoot and improve programs written in Matlab and for a Motorola DSP56300 chip. Aided in students' understanding of course material by giving lectures and providing regular office hours. Established course website. Graded lab assignments.

Lockheed Martin Technical Operations
Aurora, CO 7/2004 – 5/2006

College Intern

College intern with P601 Configuration & Test Management, Engineering Support Department, a systems engineering project team. Worked under general supervision and independently determined and developed solutions to problems. Personally conceived, developed, and implemented scripts and programs for automation and processes improvement. Supported the design, development, and analysis of tasks relating to the storage and retrieval of program information. Assisted in the training of team members in computer resource and information management techniques and systems.

**University of Colorado at Boulder EE/Telecom Dept
Boulder, CO 8/2004 – 1/2005**

Research Assistant

Project sponsored by L-3, tasked to provide interconnectivity of multiple ground and UAV-based nodes using 802.11b. Nodes establish a self organizing, shortest hop network using proprietary routing. Implemented data backhaul connection using multiple Iridium links to provide WAN and Internet access to 802.11b test network. Developed and conducted network testing procedures to determine effectiveness and viability of Iridium link. Assisted with other network tests.

**University of Colorado at Boulder ME Department
Boulder, CO 1/2004 – 10/2005**

Lab Administrator

Improved functionality of the network by repairing all network jacks, replacing broken hardware, etc. Made necessary contacts to obtain software and licenses. Provided assistance with updating the department website.

**Pastime Publications, Inc.
Denver, CO 7/2001 - 8/2002 (through the school year)**

Domain Administrator

Diagnosed and repaired problems with assorted computers and equipment arriving on large pallets then resold the fully functional machines. Equipped, configured, and managed a small business domain.

**Medical Business Resources, Inc.
Denver, CO Summer employment 2001, 2002, & 2003**

IT Intern

Worked directly under the executive assistant; checked for and fixed errors in accounting, and helped with the renewal of equipment leases. Miscellaneous work including computer administration, data entry, and accounts receivable.

ACADEMIC PROJECTS:

Developed and implemented modular data acquisition system using Controller Area Network (CAN) for processor communication and FAT16 storage of data on removable flash media. Configured microprocessor and code for interrupt driven sensor sampling and FAT16 storage. Extensive PIC experience. Team leader. Coordinated with industry representatives and private parties for support and sponsorship. Wrote RFP obtaining \$5000 grant money. Wrote C# program for graphical and numeric representation of collected data. Developed and managed complex schedules to meet all task deadlines.

Experimentation with off-the-shelf and modified wireless networking equipment to create a WAN spanning multiple buildings at large distances. Homemade antennas were tested with 802.11b protocol.

Designed and constructed a small circuit for RS-485 to RS-232 full duplex protocol conversion utilizing surface mount components and custom etched boards. Driver coded in x86 assembly for serial communication using modified RTS/CTS.

ACTIVITIES:

2005 Formula SAE Team – Team designed and built a formula style race car for a worldwide competition. Actively worked with the team to help build and test the car. Machined some components from SolidWorks models. Designed circuitry with another team member for custom dashboard, which included tachometer and temperature displays. Designed and constructed a data acquisition system for the 2005 car.

AWARDS:

CU Memorial Scholarships 2003-2006; CU Department of Engineering Dean's List.

MEMBERSHIPS:

Institute of Electrical and Electronics Engineers, Inc. (IEEE)