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EDUCATION

2007 B.S. Electrical Engineering, Utah State University, Logan.

RELEVANT VOLUNTEER AND WORK EXPERIENCE

2006-2007 *Electrical Design Engineer, Utah State University Environmental Soil Physics Lab*
Soil probe theory, design, construction, and installation; soil physics research; top-level electrical design; sub-level electrical design; sensor and microcomputer interfacing; sensor calibration; data analysis; computer networking; advanced spreadsheet programming; website maintenance and design; PCB layout and design; system maintenance; programming and troubleshooting Campbell Scientific dataloggers; project documentation; precision soldering; product pricing; technical consultation.

2005-2007 *Webmaster, USU Big Band Swing Club*
Webpage design; graphic artist; HTML editing; JavaScript implementation; layout design.

PROJECTS

2007 *Electrical Conductivity Probe*
System integration; sensor construction and calibration; constant current driver design including a current mirror; MOSFET implementation; optical isolation; analog to digital analyzation; technical support.

2007 *Real-time Audio Analyzer*
System design; microprocessor programming; PC interfacing via USB 2.0; power management; design process; team task management.

2007 *Logically-controlled Analog Multiplexer*
System design; PCB layout; microprocessor implementation; BJT and MOSFET subsystem design.

2006-2007 *O₂ and CO₂ Sensors*
Sensor implementation and calibration; gas measurement theory; sensor interfacing; analog conversion; sensor maintenance; troubleshooting and consultation; long-term data collection and analysis.

2006-2007 *TDR Probe*
Water content calculation via time-domain response; high frequency calculation; design and fabrication of sensitive hardware.

2006-2007 *Digital Soil Water Flux Probe*
Design process; heat pulse technology research; system design; circuit board layout; design miniaturization; microprocessor programming; PC interfacing via RS232; SDI-12 interfacing; power management; analog to digital conversion; surface-mount soldering; time management.

2006-2007 *Heat Pulse/EC Probe*
Physical design and fabrication; temperature calculation via Steinhart-Hart Equation implementation; precision soldering; power calculation; probe calibration; complex analog multiplexing; datalogger interfacing; voltage divider implementation.

2002-2006 *Healthcare database design, Sunshine Terrace Foundation, Inc.*
Design of individual-record database; extensive programming in Microsoft Excel; facilitation of recording and storage of dietary preferences; technical support for database program, including tutorials and documentation.

ADVANCED ENGINEERING COURSEWORK COMPLETED

2007 *Information Security Engineering*
Network security methodology, data encryption systems, group task management.

2007 *High-Performance Microprocessor Architecture*
Micro-architecture fundamentals, instruction set analysis and design, pipelined and superscalar architectures, software-hardware interaction, memory hierarchy.

2007 *Microcomputer Interfacing*
Hardware and software interfaces to microcomputers, audio analysis.

2006 *Mobile Robots*
Embedded processors, sensors, DC motors, interface electronics, wheeled platforms, and battery power, behavioral algorithms, advanced sensors, mobile robot kinematics and control.

2005 *Digital VLSI Design*
Design of large digital systems using hardware description languages, schematic capture, system modeling and simulation.

SPECIAL QUALIFICATIONS AND EXPERIENCE

Specialized / Engineering Computer Skills
Matlab, Simulink, C++, Eagle Layout Editor, PSPICE, MASM, Verilog HDL, MPLAB, Basic, Microchip C18 Compiler, Campbell Scientific CR10 – CR3000 dataloggers, LoggerNet, TDR100, WinTDR, HTML, JavaScript, Adobe ColdFusion, Microsoft Windows, photo editing software, word processors, spreadsheets, presentation software.

2004-2007 Leadership Experience, USU Big Band Swing Team director.

1997-1999 Voluntary service, Argentina. Fluent reading, writing, and speaking Spanish.
