

# Lance McBride, P.E.

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## Objective

A challenging position that will utilize my educational background, experience as an Electrical Engineer, and my wide range of natural talents.

## Work Experience

### President / Owner

1/2007 - Molly Maid of SE Sugar House, Salt Lake City, UT

- Managed growth from \$0/year to over \$550,000/year
- Doubled sales between 2007 to 2008
- Currently manage a staff of 17
- Developed and implemented a marketing campaign
- Performed over 500 sales calls
- Interviewed, hired, trained and fired employees
- Managed inventory and procurement needs
- Handled customer complaints

### Electrical Engineer III

7/2001 - 12/2006 Monterey Bay Aquarium Research Institute, Moss Landing, CA

- Developed an underwater WiFi link for an AUV/UUV docking station
- Provided an electrical system design for a docking AUV/UUV
- As lead engineer, developed a prototype Science Instrument Interface Module (SIIM) for the MARS subsea network
- Managing a team of four undergraduate senior engineering students in a collaborative effort to develop the control and data acquisition electronics for a laser-scanner
- As lead engineer, performed feasibility study to apply low-light video and LED illumination systems to MBARI's underwater vehicles
- Integrated an ICCD camera with a lens, solid-state LED lights and underwater pressure housing and designed a camera controller board for use in a range-gated video imaging system
- Designed a high-intensity underwater solid-state LED light tested to 1800m depth
- Studied synchronous laser spot scanners
- Researched and presented a report on satellite communications for marine buoys
- Integrated the embedded control system and communications subsystems into three deployed scientific buoys
- Designed and managed layout and assembly of several circuit cards for marine applications
- Integrated a low-voltage DC/DC converter into a low-power bio-fuel cell for a DARPA ATO grant
- Prepared and presented a working marine sediment bio-fuel cell system at DARPATech 2005
- Managed two summer interns
- Designed embedded electronics for underwater scientific instrumentation
- Designed embedded electronics for a motor-driven protective shutter
- Redesigned two fiber optic HDTV transceiver circuit boards
- Developed a low-voltage DC/DC converter for low-power applications

- Studied electric field detector for sensing underwater electric fields
- Presented several papers at IEEE Oceans conferences
- Developed the electronics and PCB for a plug-and-work interface for RS-232 & RS-485
- Developed the electronics, firmware and PCB for a remote system reset application
- Surveyed wave/tidal energy systems

### Sr. Analog/Digital Electrical Engineer

6/2000 - 7/2001 Kaiser Electronics/Rockwell Collins, San Jose, CA

- As lead board designer, designed the digital aspects of a video processing board for the ARMY's Comanche helicopter
- Supervised and assisted with the debugging of the board and integration of the board into the full system.
- Created the schematic for integration of multiple analog/digital designs into one PCI PCB to demonstrate the capabilities of an advanced 2D video processing chip.
- Developed a Windows based PCI software driver for the demonstration board listed.

### Electrical Engineer

2/1998 - 6/2000 Optivus Technology, San Bernardino, CA

- Designed microcontroller based local control system for 425MHz 300kW RF Amplifier
- Designed microcontroller based in-cable interface for APC UPS to VME crate connectivity
- Managed development of a high voltage PCB used to drive a 60kV capacitive plate
- Rebuilt/overhauled 425MHz 5kW cavity amplifier
- Worked with consultants to improve 425MHz amplifier performance
- Built a simple H-field probe for mapping magnetic fields within accelerator equipment room
- Provided technical support for an EMC/EMI study of the LLUMC synchrotron accelerator for FDA approval
- Taught a 1-day EMC/EMI basics course based on material from Don White and other sources.
- Designed embedded control system hardware for the injection intensity feedback and control of the proton synchrotron accelerator
- Redesigned the control room for the proton synchrotron accelerator
- Redesigned timing system implementation for proton synchrotron accelerator system
- Provided engineering support for several accelerator subsystems including a 32,000A, 3200V pulsed magnet power supply and a pulse discharged 60kV capacitive plate.
- Developed specifications for a VME crate used in the control system of the proton accelerator system
- Designed a Local Area Network, LAN, for proton synchrotron accelerator control system
- Managed documentation of the physical layout of the LLUMC Proton Beam Treatment System
- Managed and supported documentation of the cabling of the synchrotron accelerator
- Designed and implemented a prototype system for an internal document control strategy utilizing PDF files
- Designed and implemented installation of VeriBest/Mentor Graphics EDA suite including parts database structure
- Built and administered the Electrical Engineering NT 4.0 server.

### Programmer & Network Administrator/Engineer

8/1996 - 2/1998 Advanced Management Solutions, Yucaipa, CA

- Responsible for redesigning and implementing current LAN to facilitate a future WAN VPN
- Supervised frame relay based fractional T1 installation from GTE
- Installed NT4.0/95 TCP/IP network which maintains compatibility with MAC, UNIX and NetWare clients
- Developed a Windows based C code parser for internal code documentation

### Education

2/2006 - 2/2006 Professional Engineer - Electrical Engineering, Sacramento, California

- Professional

6/2005 - 6/2005 UC Santa Barbara, Santa Barbara, CA

- Vocational
- Short Course: 39th Annual Modern Infrared Detectors and System Applications

6/2004 - 6/2004 Massachusetts Institute Of Technology, Cambridge, MA

- Vocational
- Short Course: Physics of Organic Optoelectronics.

12/2002 - 12/2002 California Institute Of Technology, Pasadena, CA

- Vocational
- Short Course: Successful Project Management - taught by Paul Konkel

6/2001 San Jose State University, San Jose, California

- Some College Coursework Completed
- Major: Electrical Engineering
- STATUS: Started work on M.S.E.E.
- COURSES:  
Linear Systems Theory

9/1992 - 6/1996 Walla Walla College, College Place, Washington

- Bachelor's Degree
- Major: Electrical Engineering
- Minor: Mathematics
- COURSES:  
VLSI Design, Photography, Physical Electronics, Microprocessor System Design, CPTX Architecture, Signals & Systems, Instrumentation, Electronics, Linear Network Analysis, Circuit Analysis, Electromagnetic Fields, Electromagnetic Energy Conversion, Digital Control Systems, Feedback & Control, Digital Design, Digital Logic, Electric Machines & Controls, Thermodynamics, Fluid Mechanics, Engineering Mechanics I-IV, Engineering Economy, Principals of Physics, Chemistry, Calculus I-IV, Statistics, Linear Algebra, Ordinary Differential Equations, Probability & Statistics, Assembly Programming, PASCAL
- PROJECTS:
  - CMOS VLSI ADC digital front end
  - ADC/DAC Microprocessor based storage
  - Digital control of three spring-linked axially driven/monitored dumbbells
  - AM Radio
  - Pascal customer database
- SENIOR PROJECT:
  - 8051 Microprocessor based ADC/DAC communication system
  - Converted/multiplexed digital and analog signals to a serial data stream for transmission through a fiber optic link.
  - Analog transistor based fiber optic transmitter/receiver pair.

UCLA, Los Angeles, CA

- Vocational
- System Engineering for Project Managers Short Course

Hartnell College, Salinas, CA

- Certification
- The Supervisory Academy

## Affiliations

6/1992 - Present IEEE

- Member

6/1999 - 6/2007 Aircraft Owners & Pilot's Association (AOPA)

- Member

7/2006 - 12/2006 Seventh-Day Adventist Church - Hollister, CA

- Interim Pathfinder Club Director

10/2001 - 10/2006 Experimental Aircraft Association (EAA)

- Member

5/2005 - 6/2006 Seventh-Day Adventist Church - Hollister, CA

- Assistant Head Deacon

5/2005 - 6/2006 Seventh-Day Adventist Church - Hollister, CA

- Pathfinder Club Deputy Director

1/2005 - 5/2005 Seventh-Day Adventist Church - Hollister, CA

- Head Deacon

8/2003 - 5/2005 Seventh-Day Adventist Church - Hollister, CA

- Church Board Member

8/2003 - 5/2005 Seventh-Day Adventist Church - Hollister, CA

- Pathfinder Club Director

1/2003 - 12/2004 Seventh-Day Adventist Church - Hollister, CA

- Deacon

6/1995 - 6/1996 IEEE

- President - Student Branch (WWC)

## Skills

Skill Name	Skill Level	Last Used	Experience
▪ C programming	Intermediate	1 year ago	3
▪ EMC/EMI/ESD	Intermediate	+4 years ago	2
▪ IBM assembly programming	Intermediate	+4 years ago	1
▪ Labview Programming	Intermediate	Currently used	2
▪ PCB / printed circuit layout	Expert	1 year ago	3
▪ PIC DSP assembly programming	Intermediate	1 year ago	1
▪ PIC non-DSP assembly programming	Intermediate	2 years ago	3
▪ VHDL programming	Beginner	+4 years ago	1

## References

Reference Name	Phone	Email	Type
▪ Available upon request	N/A		Professional

## Additional Info

## PAPERS/PUBLICATIONS

- Primary Author: "An Empirical Analysis and Design Using 802.11g and 802.11a Technology in Seawater", IEEE Ocean Engineering Journal (submitted)
- Primary Author: "Solid-state Pressure Tolerant Illumination for MBARI's Underwater Low-light Imaging System," IEEE Journal of Display Technology, Vol. 3, Issue 2, pp. 149-154
- Primary Author: "Power Storage and Conversion from an Ocean Microbial Energy Source," Proceedings IEEE Oceans Conference 2006, Boston.
- Primary Author: "MBARI's Midwater Ecology Low-Light Imaging System Development," Proceedings IEEE Oceans Conference 2006, Boston
- Listed Author: "MBARI's Buoy Based Seafloor Observatory Design", IEEE Oceans 2004
- "Photovoltaic switch disables unused LEDs", EDN, March 18,2004, pg.104.
- "Prototype Instrumentation Under the Microscope", Sea Technology, April 2003
- "Prototyping with Fine Pitch and BGA SMT in Oceanic Engineering", IEEE Oceans 2002
- Primary Author: "MBARI New Anti-biofouling Shutter", IEEE Oceans 2003
- Listed Author: "MBARI Ocean Observing System update, MOOS Mooring System", Office of Naval Research/Marine Technology Society Buoy Workshop 2002.
- Listed Author: "Dynamic modeling and actual performance of the MOOS test mooring", MTS/IEEE Oceans Conference, San Diego, California. pp. 2574–2581.
- Listed Author: "Managing sensor network configuration and metadata in ocean observatories using instrument pucks", The Third International Workshop on Scientific Use of Submarine Cables and Related Technologies, Tokyo, Japan.AWARDS
- 3rd place for student entry in the 1996 Columbia Basin Technical Conference and Trade Show

## CERTIFICATES

- P.E. - California
- Engineer in Training Certificate #21275
- Microsoft Certified Systems Engineer - MCSE (1998)
- EMC - All you need to know - Don White
- Private Pilot

## CONFERENCES ATTENDED

- Photonics West 2006, San Jose, CA
- DARPA Tech 2005, Anaheim, CA
- Photonics West 2004, San Jose, CA
- IEEE Oceans 2003, San Diego, CA
- IEEE Oceans 2002, Biloxi, MS
- Communications Design Conference 2001, San Jose
- Bluetooth Developer's Conference 2001, San Francisco
- IEEE Oceans 2001, Honolulu
- PCI SIG 2001, San Diego
- Embedded Systems 2001, San Francisco
- Mobile Telephony, Irvine
- ACM SIGGRAPH 1998, Los Angeles
- ACM SIGGRAPH 1996, Los Angeles