Raymond Vivian

Arlington, TX
-Email me on Indeed: http://www.indeed.com/r/Raymond-Vivian/97e9ca6b904fba86

Licensed professional engineer with over thirty years experience in all phases of electronics, including design, management, manufacturing, computer programming, repair and troubleshooting.

• Management Experience (Business Owner for 10+ yrs) • Real time embedded software design
• Circuit Design: Analog (DC-RF) and Digital • Aerospace and medical electronics design
• Consumer Electronics: Cell Phones, Digital Cameras • Business: General Contractor, Apartment rentals
• Unlimited Certified Electrical Contractor • Prototype R&D design

Work Experience

Principle Electrical Engineer

Raytheon Corp - Dallas, TX
June 2019 to Present

• Support the tower cleanup effort caused by roof failure from a storm by rebuilding the Analog Digital Optical test set which included verifying and replacing defective equipment, recalibrating all non-defective equipment, moving tester to a new location, reintegrating tester and verifying golden unit in approx. 6 weeks
• Provide support in Forest, MS for the Analog Digital Optical test set that is having manufacturing test issues with multiple product failures.
• DC Power system to drive IRAD project. Design PDU and safety control system.

Electrical Engineer Design, Test and Integration

Lockheed Martin
October 2017 to April 2019

• Power design and calculations including generator, power distribution units(PDU), power supplies and startup coordination and procedures Wiring interconnect and cable drawings of system.
• Design and troubleshoot Mixed Signal Distribution board.. This board routes pulsed digital signals and controlled RF module switching.
• Investigation of a problem with PDU tripping. Problem due to under AC under voltage, problem due to Air Conditioning issue. Further investigation showed that the Compressor was "short cycling", therefore drawing a large amount of current in a locked rotor state. Reason for short cycling was due to condenser unit fan not operating causing system pressure to be too high. Fan was not operating due to a small piece of casting metal (FOD) that had become lodged in the fan motor. FOD removed and problem solved. Saved money at time at testing range for the team being unable to test.
• Support field testing of RF unit receiver and transmitter.

Staff Electrical Engineer

Lockheed Martin - Grand Prairie, TX
March 2011 to April 2019

Electrical Engineer

Lockheed Martin

August 2014 to October 2017

supporting Patriot Missile System (PAC3)

• System failure analysis requiring analog, digital, and processor knowledge for formal Failure Review Board presentation to the Government customer.

• Investigation of a problem with production failures of the launcher motor control unit. I identified the problem as noise generated by a switching circuit coupling into the control circuits. I designed and implemented a solution saving the production schedule millions of dollars in losses.

• Investigated card cage wiring harness installation issues. Designed and implemented a solution and was given an award.

• Led the design team of an electrical system for a portable remote missile repair facility. This is a system utilizing a generator to power HVAC systems, electronics systems and all required lighting and safety systems. The group is utilizing my wide range of skills from my previous years of facilities experience in addition to manufacturing and electronics troubleshooting / repair skills.

Electrical Engineer

Lockheed Martin

March 2013 to August 2014

supporting Guided Multiple Launch Rocket System (GMLRS)

• Designed a test interface box for a new ISD (Int. Safety Device). This was used to pass the formal LIT/ SIT testing.

• Working with guidance group to resolve problems on Honeywell guidance boards in Level 3 electrical tests.

• Small triple output switching power design (approx 40W) for a guidance set.

March 2011 - March 2013; Join a startup business group designing and installing power management (microgrid) systems.

• Use multiple sources (generator, solar, energy storage system) in an islanded and grid tied microgrid system.

• Designed and installed a Schneider Vijeo ciTech SCADA into our microgrid development laboratory. Attended class from Schneider for the SCADA software.

• Write statements of work (SOW) to purchase items and hire subcontractors for the Fort Bliss microgrid ESTCP MEDES project. Controls design and implementation.

• Specified and purchased materials to complete job and manage construction activities.

• Performed all drawing changes and municipality communications.

• Use EDSA to perform fault calculations, arc flash and breaker coordination.

• Studying dynamics and control of power systems for use in microgrids.

• Proposal and design (electrical, switching and algorithms (microgrid black start and shutdown, margin control, peak shaving, energy storage control) of Spiders (Fort Carson, CO microgrid). Recent patent submission as primary designer.

Self Employed

Apex Contractors Inc

October 2008 to March 2011

Owner of General and Electrical Contracting Business.

• Professional engineer on all projects, sign and seal drawings to obtain permits.

• Bid projects, Commercial, Industrial and Residential

• Write, review and negotiate contracts for projects.
• Specified and purchased all materials to complete job and managed all construction activities.
• Performed all drawing changes and municipality communications.
• Completed electrical contract from American Building Engineers to convert 10,000 sq ft of warehouse to office space.

Electrical Engineer

American Building Engineers (ABE) - Fort Lauderdale, FL
January 1998 to March 2011

• ABEProfessional Engineer/ General Contracting firm that bids, designs plans and builds commercial, Industrial and residential construction.
• Electrical engineer for all building designs including all panel layouts, NEC load calculations, Florida Power fault calculations, lighting designs.
• Value engineering for all designs to save money and meet all codes.

Senior Electrical Engineer

Pool People Commercial - Pompano Beach, FL
October 2007 to September 2008

Design electrical plans for commercial structures and water parks.
• Company designs and builds large water parks with multiple slides, wave pools, etc.
• Complete electrical plans including service entrance and municipality communications.
• Specified switchgear, transformers, wire sizes and panels to complete 1MW job with multiple buildings and inspect installations.
• Design amusement park functions with Programmable Logic Controllers.

Self Employed

Apex Contractors Inc
January 2007 to October 2007

Designed and obtained permits for townhouse project.
• I was the architect and professional engineer, signed and sealed all drawings.
• Pulled all permits. To do this required dealing with multiple management and regulatory issues.
• Specified and purchased all materials to complete job and managed all construction activities.
• Performed all drawing changes and municipality communications.
• Electrician: did all wiring, high voltage, low voltage (cable, phone, LAN) and exterior yard and garden lighting.
• Completed townhouse with two units. Sold one unit before mortgage industry collapsed.

Senior Electrical Engineer

Heartware Corporation - Miramar, FL
March 2005 to January 2007

Position in a research group developing a controller for an artificial heart.

• Embedded design using a Texas Instruments TMS320F2812 DSP to drive a brushless DC motor. Software written in C using TI Code Composer Studio. Controlled 2 BLDC motors, used in the pump, running at 35,000 rpm.
• Operating system DSP/BIOS and original. Designed PC board using Altium.
• RF communications to control motor speed; provide alarms and patient information.

Electrical Engineer

DME Corporation - Fort Lauderdale, FL
April 2002 to February 2005

Position in a product design group developing new products, manufacturing support for existing products (Airport runway lighting systems, emergency radio beacons, digital indicator systems).

• Reengineered a runway strobe lighting system to solve a major reliability problem due to back EMF during switching.
• Designed a replacement MALSR system for their aging system using Atmel uP ATMEGA128.
• Designed and put into manufacturing a Digital Altimeter System used by air traffic controllers for altimeter corrections. Atmel uP ATMEGA16 used SPI, IIC and multiple RS232 buses for communication. Software written in C using Imagecraft compiler and AVR Studio for emulation.
• Designed a new LED based Exit sign with photosensor
• 767 Reading Light design: switching power supply to drive Lumiled high power 5 Watt LED's.
• Designed a new LED based taxiway light that uses the existing current control loop on the airfield.

General Contractor/ Engineer

DME Corporation
February 2002 to August 2003

Designed and obtained permits for my 7300 sq. ft. home.
• I was the architect and professional engineer, signed and sealed all drawings.
• Pulled all permits. To do this required dealing with multiple management and regulatory issues.
• Specified and purchased all materials to complete job and managed all construction activities.
• Performed all drawing changes and municipality communications.
• Electrician: did all wiring, high voltage, low voltage (cable, phone, LAN) and exterior yard and garden lighting.
• Completed home August 2003 while working full time split shifts (prearranged agreement) for DME Corporation above.
• Sold home Sept 2005 as planned.

Staff Engineer

Concord Camera - Hollywood, FL
April 2001 to February 2002

Engineering position in a product design group developing digital cameras.

• Switching power supply design for CCD based camera using OrCad board design tool.
• Part of a team that used Visual Basic Software to transmit images wirelessly from a digital camera using Bluetooth.

Electronics Engineer

Motorola - Fort Lauderdale, FL
January 1998 to April 2001

Position in a R&D group designing new products to be manufactured in 0-2yrs.

• Four patent submissions within 24 months: 2 Patents granted for Piezo Switch Design. Protel 99 PC Board design. Mathworks design tool.

• Design of a prototype cellular radio utilizing alternative user interfaces. Motorola 68HC11 assembly language programming. Complete circuit design through programming and prototype build. Mentor graphics schematic design. FPGA design, IAR Workbench. Programming IIC, SPI, UART, PWM.
• Fuel Cell Development: Designed a control system for a prototype miniature hydrogen fuel cell to power a cell phone. Presented prototype with team to former CEO Bob Galvin, father of current CEO Chris Galvin.
• Presented a working prototype of fingerprint scanning technology and alternative user interfaces at Motorola's internal technology review to Chris Galvin and senior technical staff.
• Blackbelt training, completed all classes but did not complete all projects before layoff. JMP software-solves statistical models and problems using this tool.

Contract Electronics Engineer

Johnson & Johnson Medical - Tampa, FL
July 1996 to December 1997

Original equipment manufacturer of medical electronics (patient monitoring systems).

• Switching power supply design to drive the interface ports. From circuit design and board layout to manufacturing feasibility through testing, documentation and integration. Power supply design meets UL601-1.

• Embedded design (Video): C programming for VGA flat panel display controller (Chips & Technologies 65535).

• Resolved vendor problems: flat panel color display, primary switching power supply and switch quality control.

• Wrote software comments for PIC16C74, written in assembly language.

Senior Electronics Engineer

Scandia Technologies, Inc - Clearwater, FL
February 1996 to July 1996

Original equipment manufacturer/integrator of a broad range of automated industrial machines.

• Electrical design of thirty station automated rocker arm assembly machine; specified and developed all instrumentation on machine including: gauging, pressure, vacuum, and flow (Dimensions of machine 40'L X 10'H X 10'w). Implemented interface to programmable logic controller.

• Redesign pick and place machine utilizing 8051 microcontroller, test fixture design, software (Basic and C).

• Rewrote PLC program for milling machine.

Job History from July 1984 - January 1996 is various positions within General Electric which than became Lockheed Martin. This is continuous employment with one employer. I have broken this period of time into individual jobs to show my experience with each position. This was DOD secret clearance from 1984 -1986 and DOE Q clearance from 1986 - 1996 in a DOE plant run by GE than Lockheed Martin.

Senior Instrumentation Engineer

GE - Largo, FL

April 1991 to January 1996

• Supervise equipment service group (seven senior technicians), providing troubleshooting, repair and maintenance to nuclear weapons component manufacturing and test equipment (over one-half of the 700,000 sq. ft. facility).

• Provide hardware support to all 1200 IBM compatible personal computers in the facility.

• Redesign, modify or replace process and test equipment.

• Provide technical support and consultation for entire electrical system in the plant, including 13KV switchgear, (4) 200KVa UPS systems, transfer switches and 400-700KVa Generators.
• Manage entire group of 25 personnel during managers' absence.

Advanced Equipment Engineer

General Electric Neutron Devices - Largo, FL
May 1989 to April 1991

• Designed and programmed specialized electronic process and test equipment, utilizing PC and PLC controllers.

• Drafted supporting documentation: schematics, mechanical drawings, operating procedures, software documentation and calibration procedures utilizing Spice, Autocad, Lotus 1-2-3, Works.

• Designed product testers: optoelectronics, clock/resonator (30 Mhz range) and high voltage capacitors.

Advanced Instrumentation Engineer

General Electric Neutron Devices - Largo, FL
March 1986 to May 1989

• Designed, modified and performed calibration for new process equipment. Drafted calibration procedures.

• Procured new test and control equipment, when necessary, to perform these calibrations.

• Analyzed equipment performance data and established calibration/service intervals and replacement schedules.

Quality Assurance Engineer

General Electric Ordnance Systems - Pittsfield, MA
July 1984 to March 1986

• Redesigned existing test and inspection clean room facility for new Trident II nuclear submarine electro-optical equipment. Designed and implemented Production Test and Inspection Plan for this new equipment.

• Analyzed performance and quality data from test equipment/production hardware to initiate design changes.

• In a one year period, I had written and implemented three cost improvements, saving the company $66,000.

Electronics Engineer

Brad Cable Electronics - Schenectady, NY
June 1983 to June 1984

• Designed, built and tested digital circuit boards (microprocessor based descramblers for cable television converters).

• Troubleshot and repaired test equipment including oscilloscopes, sweep and signal generators.

• Troubleshot and repaired cable television converters mostly Oak and Jerrold including VCO, mixers, power supplies and digital descamblers.

Education

MSEE

University of Massachusetts
May 1988

BSEE

Union College
June 1984

Regents Diploma

Mont Pleasant High School
June 1979

Skills

- AutoCAD
- C/C++
- Embedded Software
- Electrical Engineering
- Power
- Electronics
- Programmable Logic Controllers

Certifications and Licenses

Professional Engineer

April 1993 to February 2021

State of Florida Lic #47047