Erich Viebrock

Milpitas, CA • erich.viebrock@gmail.com • 916.247.2265

OBJECTIVE:

Pursuing a position as a Software Developer where I can apply my knowledge of object-oriented programming to efficiently provide high-caliber software solutions

PROFESSIONAL EXPERIENCE:

Software Engineer August 2014 – Present

THINK Surgical, Incorporated - Fremont, CA

- Designed, developed, tested, and released software for a robotic surgical device utilizing C++ and XML on a QNX platform. Increased stability, functionality, and performance of pre-existing modules to meet customer requirements
- Followed a rigorous design control protocol by writing intricately detailed architecture designs, easily readable and maintainable syntax, and verification plans for newly proposed changes based on regulatory requirements
- Critiqued and improved code of team members, from a back-end application layer, a low-level control system, and a front-end Qt display

Software Test Engineer January 2014 – August 2014

THINK Surgical, Incorporated - Fremont, CA

- Responsible for designing and executing risk-based software integration level tests covering Diagnostics and Calibration functionality of a robotic surgical assistant
- Developed automated white-box tests in C++ on a QNX platform. Designed and executed additional manual tests for system validation. Work was completed on time, under tight scheduling conditions
- Trained company personnel on proper use for new software features of a robotic surgical assistant, including developers, electrical engineers, and clinical trainers
- Assisted with preparing international standard IEC 62304 compliant test documentation for FDA 510(k) submission

Software Test Engineer Intern May 2013 – August 2013

THINK Surgical, Incorporated - Fremont, CA

- Documented requirements and performed manual black box testing trials to enhance product quality of a robotic surgical assistant
- Implemented and managed an email notification system for an automated testing system integrated with commercial static analysis tools, and made front-end changes for usability
- Established specifications and validation procedures for off-the-shelf software to ensure FDA and ISO compliancy

Electrical Engineer Intern January 2012 – August 2012
JST Corporation - Harrisburg, PA

- Wired and tested electrical control panel I/O by varying PLC outputs with RSLogix 5000
- Backed up and recovered information on industrial HMIs used for high speed connector assembly machines
- Updated electrical schematics with design changes of different types of servo motors ranging from linear, direct drive, and rotary motors with gear boxes via AutoCAD Electrical

EDUCATION:

Bachelor of Science, Computer Engineering
Minor, Computer Science
University of the Pacific - Stockton, CA

Projects

- Senior Project II: Designed an autonomous robot with a team of four engineers in Arduino C. Robot was capable of sensing its environment, and traveling to any user inputted waypoints within a 24,000 ft^2 building. Motion was implemented with the self-balanced Segway paradigm, and was capable of avoiding any obstacles the robot may encounter during travel.
- Computer Networking: Wrote a multi-threaded program to implement a TCP chat room server and GUI client using Tkinter in Python. Clients were all routed through a central server, which required parallel tasks to communicate with each other. Race conditions were handled with dedicated queues and blocks.
- Data Structures: Created the event driven arcade game "Breakout" in C++ in conjunction with OpenGL and GLUT. Displayed output in real-time interactive 2D GUI. Stored all dynamic game objects in respective linked lists. Iterated through all lists at redraw rate of 30 FPS for collision detection.
- Computer Organization and Architecture: Designed a 32-bit MIPS embedded processor from Boolean logic gates and multiplexers. Processor supported the standard MIPS instruction set including exception handling, supervisor control, and interrupts.

KNOWLEDGE AND SKILLS:

Programming Languages

C++, C, Python, HTML, CSS, Assembly

Platforms

Windows, Linux/UNIX, QNX

Version Controls

Git, Subversion, Mercurial

IDEs

Eclipse, Momentics, Visual Studio, Code Blocks