Patrick J. Franz

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Experience

October 2008 – Current | XIA, LLC | Hayward, CA

Software Group Manager

Manage the commercial software group. Plan and participate in development of commercial software for the x-ray processor and α-particle counter product lines.

- Drive engineering process for the software group including code reviews, version control, bug tracking, etc.
- Develop software for the UltraLo-1800 α-particle counter. Coordinate overall development effort between the software group and the UltraLo group. Work closely with the UltraLo Product Manager to design the software package.
- Lead design of next-generation software for the x-ray product line. Develop UI mockups and specifications to guide the development work.
- Develop software to perform coincidence analysis on data collected from a pair of x-ray detectors for a phase I SBIR grant. Analysis results were included in the publication cited below.
- Develop a custom software test framework that simplifies testing all combinations of hardware and communication protocols. The test framework is used for the entire x-ray and α-particle counter product lines.
- Prototype algorithms for automating the calibration of XIA's next-generation x-ray processor.

May 2007 – October 2008 | NOW Solutions, Inc. | Santa Clara, CA

Software Engineer

Develop software for tracking the movement of equipment through shipping terminals. Implement and test algorithms for next-generation Inertial Navigation System.

- Developed a real-time system in Python to scan telemetry from hardware in the field and report specific operations (chassis drop or pick) to a central server. Profiled and rewrote slower portions of the Python system in C++.
- Implemented and tested new Inertial Navigation System comprised of gyro sensor, odometers, accelerometers and GPS, using a Kalman Filter.
- Helped port Python to WinCE running on ARMV4I processors. Ported CLAPACK library to WinCE. First known port of this large library to WinCE.

February 2000 – May 2007 | XIA, LLC | Hayward, CA

Lead Software Engineer

Led design and implementation of x-ray software product line. Consulted with other product groups within the company on software projects. Managed software support requests and relationships with customers who use XIA's products.

- Designed and developed flagship cross-platform driver library for x-ray product line. Written in ANSI C and used on both Win32 and Linux platforms with support for multiple communication protocols: RS-232, USB, USB2, PXI/PCI, EPP and CAMAC.
- Led design and development of control and configuration software for the µDXP platform in Visual Basic and C. Did work on all stages of product life-cycle, from design to maintenance and support.
- Led design of control and configuration software for the xMAP platform. Worked with customers, hardware engineers and product managers to design configuration UI. Hired an additional programmer whom I supervised.
- Created internal standard for software projects detailing coding conventions, source code control and bug reporting practices. Advocated cost-effective open-source solutions whenever possible.
- Built strong relationships with XIA's customers, particularly developers who use XIA's libraries to build their own applications. Managed patch submissions from developer-customers. In at least one case, my pre-sales software support was cited as a key motivation for an OEM customer's large order.

Education

1998 **University of Colorado, Boulder** Boulder, CO

B.A., Cum Laude, Physics

Thesis: *Local Structural Distortions of the "Colossal" Magnetoresistive Oxide* $La_{1.2}Sr_{1.8}Mn_2O_7$

Skills

- C (Visual Studio, gcc, MinGW, Cygwin), C#, Ruby, Python, C++
- Subversion, Mercurial, git, Perforce
- Sqlite, MySQL, MSSQL
- USB2, PXI, RS-232

Interests

- Designing LED light displays. Created a 50 pixel RGB system based on PIC microcontrollers. Next project will explore the TI MSP430 processor.

Publications

- Hennig, W., Cox, C. E., Asztalos, S. J., Tan, H., Franz, P. J., Grudberg, P. M., Warburton, W. K., 2011, Study of Silicon Detectors for High-Resolution Radioxenon Measurements, *2011 Monitoring Research Review: Ground-based Nuclear Explosion Monitoring Techniques*