Henri Jonathan Socha

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QUALIFICATIONS

Extensive experience in Software Development over a broad spectrum including:
consulting, consumer applications, databases, documentation, drivers, emulation, games, graphical user interfaces, graphics, hardware design, hardware test, Human Computer Interfaces, IoT, micro-code, multimedia, network software, Systems Integration, system software, system utilities, testing, & training.

Programming Languages

C, C++, C#, Assembly, VBA, SQL, Robot Framework, and various scripting systems (Python), some self designed.

Operating Systems & Databases

Win 8, Win 10, Linux, Macintosh. Access (w/VBA), Oracle and others, including writing 2 database systems.

PROFESSIONAL EXPERIENCE

CENTRI Technology, Atonomi, Seattle, WA **5/2016 to present**

Senior Software Engineer, 3 month contract via Harvey Nash (Seattle, WA) then direct employee

Dept: Engineering

Environment: VS C#, C++, GCC, Python, Atlassian (Jira, etc.), Robot Framework, SVN, GIT, LibSodium, CURL libraries, ...

Designing, and writing tests for the CENTRI IP

Develop for: Windows 10, WSL, Linux on x64, IoT: Intel Edison, Armv7a (Orange/Ras Pi), Armv7m (STM-32)

Develop tests for CENTRI: Secure Documents, Data Protection, Secure Communication, Protected Session, Atonomi SDK

- Designed and wrote test and samples for a Windows Client to a CENTRI Secure Server.
- Designed and wrote tests for a Secure Documents system. Black and White box testing of the Client and Server interfaces.
- Created utility able to construct and deconstruct CENTRI Data Protection encrypted files. It can validate correctly formed files and is able to generate incorrectly formed files, using them to test their handling by the product for release.
- Created C & C++ utility modules for logging, input and output in JSON format, command line handler, and more.
- Tested TCP/IP connections to servers using CENTRI encrypted protocols and side channel hooks into various databases.
- Integrated various tests in C, C++, and a Python mix into Robot Framework generating reports for management.
- When Cryptographic APIs (Crypto_Easy) were found missing from the TweetNaCl library, added them.
- When the STM-32 was found to not have HTTP PUT, implemented it for the Atonomi SDK tests to its HTTP server.
- Modify tests as the API and protocols change, write networking tests.
- Write proposals for new products and modifications of current ones. Documentation and White Paper Review & Edit.
- Performed detailed Code and Doc Reviews finding numerous bugs and suggesting alternate coding solutions.
- Quickly become the go-to-person in the company for quality Code Review and Copy Editing.
- Learned Ethereum Blockchain and Atonomi's use of it for IoT Device validation and reputation.

Microsoft Corp., Redmond, WA **9/2014 to 1/2016**

Software Design Engineer 2, contract vendor through H-10 Capital (Seattle, WA)

Dept: Microsoft Entertainment & Devices Division – MSCIS - Manufacturing Test Engineering (MTE) - Xbox

Environment: VS C++ & C# on Windows 10 & 8.1, Server, MTE Core 3.6, 3.9, ms Workflow & TCS ...

Maintaining, designing, and writing tests for the Xbox manufacturing line

- Developed all the code for a new tester variant including writing new AC power, WiFi RF, and HDMI tests while updating & enhancing numerous other tests ex: Disc Drive & IR Blaster and various tester & DUT services.
- Tests in C# on the tester communicating via WCF with modules in C++ on the Devices Under Test (DUT)
- Ran DUTs (Devices Under Test) through test environment, validating code changes and correct system operation
- Removed build warnings, improved source documentation & logging, refactored code undoing copy/pastes, et al
- Analyzed failures in various tests going back to source for root cause
- When the production line ran into problems, quickly helped find and fix issues in the tests to get it running again
- Created and continuously updated informational and training OneNote describing the machines, processes, tests, coding, and group related information. This OneNote became a major learning aid and source of information for members of my team, the Reliability team, and even my replacement.
- Code Reviewed source changes by the China team, helping them with system level concepts, documentation, enhancing logged events with data, and coding with future needs in mind.
- Organized the lab to make it easier to find and use equipment and tools and increase available space

Microsoft Corp., Redmond, WA **10/2013 to 8/2014**

Senior Technical Lead, contract vendor through HCL Technologies (Redmond, WA)

Dept: Windows Phone – Windows Phone Customer Experience – Offsite Labs, WPQS Team

Environment: Windows Phone, Windows 8.1, WTT, Source Depot, Product Studio, WinDbg, PowerShell, ...

Failure Analysis of Customer Offsite Lab test runs & tool writer

- Performed failure analysis (logs, memory dumps, etc.) of WTT test runs on Windows Phone Devices
- Generated host website failure & usability improvement suggestions
- Performed WTT job analysis (excel, PowerShell) to find duplicate and incorrectly categorized jobs
- Design, Develop, & fix tools for WPQS Offsite Labs & Microsoft's Internal Toolbox
- Updated CXE's Engineering Handbook wiki receiving an Award of Excellence for my addition

Microsoft Corp., Redmond, WA **12/2012 to 9/2013**

Senior Technical Lead, contract vendor through HCL Technologies (Redmond, WA)

Dept: Windows Server – Hybrid Storage Services – Enterprise Core Sync – Sync Core Test

Environment: Razzle & VS C++ on Win 32 & 64, Windows 8.1, WTT, SD, PS, TAEF, PowerShell, ...

Tester of Client Work Folders feature, test suite, tools, & scripts

- Developed new tests in C++ and refactored and enhanced others to extend the Core Server test suite.
- Generated various C++ tools and utility modules needed by the Enterprise Client Sync (ECS Core) team. This included:
  - Modules: Class object XML reader/writer, Combined Logger & HResult class and macros to improve code & readability
  - Tools: XML driven ECS state analysis, Quickly generate a set of test users & their data files, WorkFolder API test
- Performed tests as needed by the ECS Core team (ex: CEC Compliance, creation of UNICODE & MAXPATH filenames)
- Updated documents & generated others describing the test environment and how to build up & test systems

Microsoft Corp., Redmond, WA **8/2005 to 10/2012**

Software Design Engineer in Test (SDET)

Dept: Windows Experience - Graphics - Printing and Serialization

Environment: Razzle & VS C++ on Win 32 & 64

- Primary Inventor of Patent US 2013/0009995 A1 "Clamp Mode Emulation" optimizing Direct2D rendering onto an XPS canvas under certain extend modes.
  Aided the Patent Attorney by documenting the invention and providing technical review of the Patent Application.
- Designed and implemented scripting test environments for GDIplus imaging verification and testing D2D graphics APIs in a printing environment.
- Provided insightful input into Windows 7 and Windows 8 Feature Planning.
- Improved verification and code coverage for a GDI module from about 16% to over 60%.
- Improved test environments by refactoring the design, creating extensible classes, and adding functionality.
- Supported the GDI and GDIplus test suite of over 2,000 tests. Maintained tests, triaged automation results, analyzed test failures, and logged bugs as the automated test environment changed.
- Culled, fixed, and improved tests easing the failure analysis effort as multiple runs occur each week.
- Provided technical analysis and also performed copy-editing of specs and other documents.
- Proactively tested various Microsoft products facilitating problem resolution with the owning group.
- Facilitated the professional development of my team, group, and/or division, by providing links to various technical articles such as Human Interface Design issues.

Teradyne Corp. (Agora Hills, CA) **7/2004 to 7/2005**

Software Engineer, contractor through W & J Partnership (Castro Valley, CA)

Dept: Semiconductor Test Division

Environment: VB & C++ using Rational ClearCase & ClearQuest on Windows XP & Teradyne FlexPlus testers

- Performed System Verification, developing tools to insure correct operation of test code
- Supported the Digital Hardware Checkers group, verifying Map Contract registers and Memory Leak Analysis.
- Analyzed Bit Charts looking for, documenting, generating bug reports (CQs), and fixing errors.
- Developed routines to access multiple Teradyne ASICs inside the FlexPlus Semiconductor Tester.
- Generated and/or edited 'wiki' pages documenting various aspects of the development environment.

DoD (Fort Ord, Seaside, CA) **1/2002 to 9/2003**

Senior Software Engineer, contractor through HumRRO (Seaside, CA)

Dept: Defense Manpower Data Center (DMDC), Personnel Testing Division, ASVAB

Environment: C++ VC6 MFC, VBA, Oracle ProC, & SQL-Plus on Windows NT

- Performed maintenance and functionality upgrades to the ASVAB (Armed Services Vocational Aptitude Battery) Item Bank database software, an MFC application and its associated Oracle database.
- Provided Project DBA and other technical support to the Personnel Testing Division
- Maintained and enhanced various software systems including the Student Testing Program's Guidance Counselor Survey and the MAPWG web sites.
- Wrote a word VBA application to parse/read human generated documents and extract items (questions) and write them to ms access. After validation by PTD personnel, uploaded the questions & answers to Oracle tables.
- Directly interacted with my users. I talked to them, found out what they were doing and wrote small tools or modified my main application, adding features to help them perform their tasks better and faster.

IKOS Systems, Inc. (San Jose, CA) **3/1999 to 9/2001**

Senior Co-Modeling Software Engineer, 3 month contract via W & J Partnership (CA) then direct employee

Dept: Co-Modeling Engineering (R & D)

Environment: Solaris & gnu C & C++, IKOS VStation (hardware emulator)

- Helped define, then designed and implemented the version 2 TIP API. This included:
  - rewriting the system from C into C++ while maintaining backwards compatibility;
  - adding an interface to a new PCI bus card, a Dual Port RAM, complementing a Parallel board;
  - updating the Functional Spec;
  - implementing JavaDoc style documentation;
  - writing test software; debugging hardware, system, and compiler problems; and
  - implementing various enhancements from an improved message & error handler to special purpose interfaces for other IKOS products.

TAPI 2 involved implementing the API to a segmented Dual Port Memory, coming up with a data structure and code technique to allow high performance access to the memory & controller. What was previously nested C subroutine calls manipulating hardware register control bits became a few lines of SUN assembly.

- Developed low level hardware verification tests to validate correct operation of the TIP API and boards.
- Interfaced w/hardware engineering on board implementation, VStation engineering on integration with the Verilog compilation system, and various groups within IKOS to implement special features in the TIP API codebase.
- Performed maintenance and functionality upgrades to the version 1 TIP API (Transaction Interface Protocol API).

It is the customer's C interface between a SUN workstation and the IKOS VStation, an FPGA based VirtuaLogic Emulation engine for hardware assisted verification of digital IC and system designs.

- Reworked script / command line level interface to the VStation emulator to handle changed architecture of the 4.0 release.
- Updated and integrated tests within the PERL based overnight build and test Configuration Management system.
- Maintained emulation hardware systems, updating FPGA code PROMs.
- Required debug and analysis of SUN C++ and GNU g++ compiled code of SUN UltraSparc assembly/machine language instructions. Found compiler bugs and hardware problems requiring assembly code solutions.
- Implemented extensive error handling system allowing for callbacks, default actions, user control of error output, and allowing the user to add messages into the output log.

EDUCATION

Bachelor of Applied Science in Electrical Engineering from the University of Waterloo, Ontario, Canada

EXPERTISE & INTEREST STATEMENT

Expertise in many facets of Software Engineering not limited to Computer Systems Architecture, Object Oriented design and development, documentation, interfaces (GUI & API) and the full SDLC with test.

I am interested in Software Engineering projects on innovative computer hardware and software systems where my experience and knowledge can be utilized and extended.

I feel that the breath of my experience and the diversity of my positions show I can learn what is necessary for a project. I am certain I will be an excellent addition to any development effort.