

Professional Experience

Mcity at the University of Michigan | CHIEF DATA ENGINEER Feb 2018 - Current

Manage and develop data collection, manipulation, and reporting systems. Mcity is a public/private partnership supporting a purpose-built proving ground for testing connected and automated vehicles and technologies in simulated urban and suburban driving environments. I report to the Lab Director and supervise developers of our Lab configuration and control software. My daily responsibilities include architecting, designing, and developing systems that make research data available to sponsors and users of the test facility.

Michigan Medicine | DATA WAREHOUSE ARCHITECT / TECHNICAL SPECIALIST Jul 2011 - Feb 2018

Designed, developed, and maintained portions of the Health System Data Warehouse (HSDW). The focus of the HSDW is to provide a complete picture of patient care, including clinical and financial information, in order to benefit clinical research and financial operations. I supervised and mentored multiple software developers. I was responsible for the design, development, code review, and deployment of ETL that supported various warehousing systems.

Achievements

- Rewrote ColdFusion web applications for account management in C#/Typescript/HighCharts. Enhanced functionality to enable management of warehouse ETL processes, logging, and generation of ETL performance statistics reports.
- Architect of the Michigan Medicine Big Data platform. Enabled researcher analysis of real time streaming EKG data.
- Architect and developer of new data subject areas within the HSDW.
- Converted existing HSDW ETL to source from a new EPIC Electronic Medical Record system.
- Developed a custom change data capture system for intelligent extraction of data from EPIC Clarity.

Maker Media Inc. | CONTRIBUTING AUTHOR May 2014 - Sep 2015

Employed by Maker Media to develop hardware projects and articles for print in magazine, book, and web publication formats. Attended industry events, interviewed members of the maker community, and wrote articles and guides relevant to advertiser and subscriber interest.

Achievements

- Developed hardware and software projects using embedded microcontrollers
- Created audio manipulation hardware using dedicated real time processors programmed in Assembler.
- Created introductory materials for readers interested in CNC machine end mills.

PPL Corporation | SENIOR ENERGY TRADING SOFTWARE DEVELOPER May 2006 - Jul 2011

Employed by the EnergyPlus trading floor to develop software for trading, analysis, and reporting on Energy Products. I directed and mentored software development resources to create multiple applications.

Achievements

- Directly contributed to securing millions in profit by creating real time trading software using Perl and webMethods.
- Designed, developed, and maintained historical generation and transmission pricing database using Oracle and Perl.
- Created a distributed computing scheduler for modeling transmission line usage (DAYZER) of transmission systems.
- Created C# applications supporting warehouse metadata management process.
- Designed and developed a data warehouse for transaction and contract data using Oracle, Informatica ETL, Microstrategy BI dashboards, reports, and cubes.
- Developed MS SQL Server Reporting Services for project tracking and portfolio management used by hundreds in IT.

Moravian College | SOFTWARE DEVELOPER / PROJECT LEAD Sep 2006 - Dec 2006

Lead developer of custom mapping software similar to modern Google Maps. Supervised multiple developers in the creation of a mapping API that enabled geolocation and generation of step by step driving directions.

Achievements

- Led a team to develop a complete mapping application for Sun Solaris CDE environments.
- Designed and developed UI for visualization using C++, GTK, and OpenGL on Sun Solaris
- Calculated routing information using C++ to process U.S Census TIGER ArcGIS data on a distributed system.

Publications & Presentations

- Worman, Tyler S, "Waves in a Data Lake," Healthcare Data Warehouse Analytics Association, October 2015, Grand Rapids, MI
- Worman, Tyler S. (2015) "The Skinny on End Mills". *The Best of Make: Volume 2*
- Worman, Tyler S. (2015) "Internet Speedometer". *Make: Magazine: Volume 44*
- Worman, Tyler S. "Data Warehouse Processing Reduction Strategies When Extracting from EPIC Clarity," Healthcare Data Warehouse Analytics Association, October 2014, Portland, ME
- Worman, Tyler S. (2014) "The Skinny on End Mills". *Make: Magazine: Volume 40*
- Worman, Tyler S, and Moravian College. Honors. Computer Science. (2006) *Examining Network Routing Algorithm Efficiency*

Continuing Professional Development

All Hands Active | OPERATIONS MANAGER / MEMBER Oct 2013 - Current
As a board member I actively recruited members, volunteers, and donors. Organized public classes and teaching material. Orchestrated communication between staff, contractors, and building management. Developed and ran multiple fundraisers to cover costs of tools, supplies, and relocation to a new location. All Hands Active is a 501c3 makerspace and coworking space.

Healthcare Data Analytics Association | MEMBER Jan 2013 - Feb 2018
Presented at multiple conferences on warehouse development techniques and Big Data topics.

MakeLehighValley | FOUNDER / MEMBER Mar 2010 - Jul 2011
Developed membership and attracted corporate economic development sponsor to fund the organization. Sought donations for tools, supplies, and furniture to build out the initial location. Procured office space, recruited business memberships, and outside donors to support ongoing operations.

ScrumMaster for Agile Software Development | CERTIFICATION Nov 2009

Association for Computing Machinery | CERTIFICATION Sep 2002 - Sep 2016

Moravian College Association for Computing Machinery | PRESIDENT Sep 2004 - Sep 2006

Technical Highlights

Software | Epic EMR, Eclipse, ER Studio Data Architect, Hadoop, Informatica ETL, Infosphere Streams, IntelliJ, MicroStrategy BI, mySQL, Netezza, Oracle 12c, SQL Navigator, Visual Studio, webMethods

Programming Languages | ASM, C, C++, C#, ColdFusion, Java (Modern 8+, Java FX), Javascript (Typescript, jQuery, Bootstrap, Vue), NZPLSQL, OpenGL, Perl, PHP, PL/SQL, Python, Rust, Spark, SQL, Streams Processing Language, Visual Basic .Net

Education

Moravian College | Bethlehem, PA Dec 2006
Bachelor of Science, Computer Science with Honors.