# Michael J. Pedersen

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## Executive Summary

An IT Generalist with over 15 years of experience managing Windows, Linux, UNIX, and Macintosh systems. A strong focus on writing programs to make processes easier and more efficient for the entire work force. Comfortable in a wide range of working conditions. Work environments have been heterogeneous (Windows, OSX, and several flavors of Linux), small to medium sized (from 10 to 120 servers, 20 to 300 workstations), and mixed locations (all local to all remote teams).

## Relevant Work History

**Open Source Software Contributions**                                      2002-Current
- Starting in 2009, I began participating in the TurboGears project, working primarily on the documentation. In 2011, I took over as project maintainer, and we put out three releases in that year alone.
- Created Java plugin for Openfire XMPP server, allowing vBulletin forums to have a working XMPP server for their communities.
- Contributed patch to Mercurial to assist with repository conversions. Specifically, it allows branches to be renamed (useful for repositories that used named branches in Subversion to change their main trunk location).
- Contributed documentation to WebGUI project, showing how to design a custom theme for WebGUI.
- Contributed documentation to libpqxx project, showing how to compile libpqxx using MinGW/MSys on Windows.

**Choopa.com**, Sayreville, NJ - Developer                                      2012
- Developed interface library to allow internal systems to manage OpenStack nodes, and gather billing information from them.
- Configured Bacula backup system as replacement for custom backup scripts.
- Refactored in-house Nagios web interface. This reduced the workload from six files down to one when adding new checks.
- Reconfigured Nagios monitoring system, reducing full systems check from 8 hours to 2 minutes.
- Built Nagios configuration file generator for in-house web interface for Nagios.
- Several smaller bug fixes and features throughout the internal code base.

**6th Avenue Electronics**, Springfield, NJ - Systems Administrator, IT Generalist     2005-2008, 2011
- Successfully lead migration from SAP to Tyler Point of Sale system.
- Developed numerous data validation scripts to validate and scrub data coming from SAP for import into Tyler system.
- Created automation scripts to easily reconfigure hundreds of terminal definitions within Tyler that could not be done via simple data import.
- Wrote automated installer for the Tyler client program to incorporate the program plus the mandatory pieces that we needed.
- Installed and configured Zenoss for full systems monitoring.
- Developed program to copy all sales data from Tyler POS system (which uses only ISAM files) to PostgreSQL database.
- Developed intranet pages (using AJAX) to allow customer service representatives to find old

invoices in the database copy of Tyler's data.
- Created intranet pages (using AJAX) to assist in the selling of complex systems.
- Created an internal wiki for use by the IT department, including populating with over 30 pages of documentation at time of deployment.
- Implemented VMWare Virtual Infrastructure 3.
- Maintained Tyler point of sale system on HP-UX (and, later, Linux), responsible for inventory, sales, purchasing, and accounting for the entire company.
- Developed workaround to resolve issue in point of sales system causing store wide sales terminal lockups.
- Retrieved bulk information from Tyler point of sale system for audits.
- Wrote several scripts to extract data from Tyler POS system before PostgreSQL database was available.
- Implemented ticket tracking system for help desk issues.
- Maintained heterogeneous environment with more than 60 Linux and more than 40 Windows servers.
- Frequently wrote scripts to satisfy various company needs using a variety of scripting languages (AutoIt3 and Python being the preferred choices, depending on platform).
- Exported data from Tyler point of sale system for import into SAP system.

**Datapipe, Inc.**, Jersey City, NJ - UNIX Developer                                    2008-2011
- Created new backup monitoring and reporting system called StorageWeb, enabling a new revenue stream for Datapipe.
- Developed a system called unixops to allow Datapipe technicians to use one time ssh keys for accessing client machines as needed.
- Optimized PostgreSQL database on FreeBSD. Multi-million record insert jobs were taking hours to complete, and the optimization brought that time down to 20 minutes.
- Debugged issues with Python, FreeBSD, Apache, and modwsgi. Turned out to require specific compilation options to get these all working correctly.
- Created internal packages for Bacula (internal name: SureRestore) for all supported platforms.
- Evaluated potential replacements for Subversion, including Git and Mercurial.

**Diversified Systems**, Hackettstown, NJ - Systems Developer / Adminisrator        2002-2005
- Worked with upper management to completely redesign entire business processes and systems company-wide (accounting, customer service, builder coordination, sales and warehouse management).
- Developed customized interface to new software system using PHP, Apache, and Mozilla. Reverse engineered new system as needed.
- Automated sending faxes to field installers, saving five man hours per day.
- Implemented HylaFax fax server for incoming and outgoing faxes, allowing electronic receipt of over 200 pages of faxes per day from field technicians.
- Deployed Unattended, an automated Windows imaging system, to standardize computer receiving and configuration.
- Converted structured portion of data from older system into a database, and provided training to employees on proper usage.
- Created PHP scripts to provide clean access to unstructured data from older system, and showed employees how to access and use.

**Self-Employed**                                                                     1995-Current
- Actively working (as lead maintainer) on TurboGears. This involves migrating our infrastructure, new development, documentation maintenance, bug fixing, and mailing list management.
- Customized installation of Request Tracker for San Diego firm.
- Helped clients, family, and friends resolve various computer and home networking issues.

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# Specific Skills

## *Software Design and Configuration Management Tools*

|  | Time Used | Last Used | Proficiency |
|---|---|---|---|
| Git | 2 years | 2012 | Fair |
| Mercurial | 2 years | 2011 | Good |
| Subversion | 2 years | 2010 | Good |

## *Markup Languages*

|  | Time Used | Last Used | Proficiency |
|---|---|---|---|
| CSS | 2 years | 2012 | Fair |
| HTML | 12 years | 2012 | Very Good |
| XML | 2 years | 2011 | Fair |

## *Operating Systems Used / Administered*

|  | Time Used | Last Used | Proficiency |
|---|---|---|---|
| Linux (Debian, RedHat, SuSE) | 13 years | 2012 | Excellent |
| UNIX (Solaris, AIX, HP-UX) | 5 years | 2011 | Very Good |
| Microsoft Windows (2008/7/Vista/2003/XP/NT/98/95) | 12 years | 2011 | Very Good |

## *Programming Skills*

|  | Time Used | Last Used | Proficiency |
|---|---|---|---|
| Object-Oriented Design | 8 years | 2012 | Good |
| Object-Oriented Programming | 8 years | 2012 | Very Good |
| Refactoring | 4 years | 2012 | Very Good |

## *Programming and Scripting Languages*

|  | Time Used | Last Used | Proficiency |
|---|---|---|---|
| Bash | 6 years | 2011 | Good |
| C/C++ | 12 years | 2009 | Good |
| Java | 1 year | 2011 | Fair |
| Javascript | 2 years | 2012 | Fair |
| Perl | 6 years | 2012 | Good |
| PHP | 2 years | 2012 | Good |
| Python | 4 years | 2012 | Very Good |

## Database Skills

|  | Time Used | Last Used | Proficiency |
|---|---|---|---|
| PostgreSQL Database Administration | 1 year | 2011 | Good |
| Relational Schema Design | 3 years | 2011 | Good |
| Structured Query Language (SQL) | 10 years | 2012 | Very Good |

## Database Servers

|  | Time Used | Last Used | Proficiency |
|---|---|---|---|
| PostgreSQL | 5 years | 2011 | Good |
| Microsoft SQL Server | 3 years | 2008 | Fair |
| MySQL | 1 year | 2012 | Fair |

## Applications

|  | Time Used | Last Used | Proficiency |
|---|---|---|---|
| Ipswitch What's Up | 2 years | 2008 | Good |
| Nagios | 3 years | 2012 | Good |
| OpenStack | <1 year | 2012 | Fair |
| VMWare | 6 years | 2011 | Very Good |
| Zenoss | <1 year | 2011 | Fair |

## Networking and Security

|  | Time Used | Last Used | Proficiency |
|---|---|---|---|
| Checkpoint VPN | 2 years | 2007 | Fair |
| Cisco | 3 years | 2011 | Fair |
| Firewall Design | 5 years | 2011 | Good |
| TCP/IP | 10 years | 2011 | Very Good |

## Education

East Stroudsburg University, East Stroudsburg, Pennsylvania          Graduated          2000
Bachelor of Science in Computer Science

# Project History

## *SAP to Tyler Conversion*

| | |
|---|---|
| **Period** | 2011 |
| **Company** | 6th Avenue Electronics |
| **Tools** | AutoIt3, CentOS Linux, Python |
| **Platform** | Server: CentOS Linux, Client: Windows |

    6th Avenue Electronics found that SAP was not a workable solution for them. The decision was made to switch back to the Tyler POS system. They would do a new installation, though, so that mistakes made with the old system could be removed, and the system could be more easily maintained. I was tapped to manage many of the technical aspects of the migration, while my immediate managers would handle the business aspects.

    Due to the costs associated with SAP, we had just over three months, in total, to complete the transition. We were successful.

- Wrote several one-off scripts to check data that was sent in various Excel spreadsheets. Validate that all entries in column A of File 1/Sheet 1 are in Column C of File 2/Sheet 1.
- Used AutoIt3 to automate the update of several items that could only be keyed into the client. No import existed at all. This reduced work from several hours down to an hour (including the initial script creation).
- Developed an automated installer that was used to handle installing all components (receipt printer, fonts, initial configuration) on every machine in the company.
- Worked with Tyler Retail Systems to configure the server properly.
- Developed snapshot backup strategy that reduces downtime for Tyler to mere minutes per night.

## *StorageWeb*

| | |
|---|---|
| **Period** | 2010 |
| **Company** | Datapipe |
| **Tools** | FreeBSD, Python, Apache, PostgreSQL, TurboGears |
| **Platform** | FreeBSD, Web Browser |

    Datapipe manages thousands of servers. Many of these servers are connected to various shared storage systems, including 3Par, Isilon, and backup servers. Datapipe required an ability to do reporting on what data was being stored on these systems for each client, and then report that data back to billing. StorageWeb was written to fill that need.

- Debugged issues with Python, FreeBSD, Apache, and modwsgi. Turned out to require specific compilation options to get these all working correctly.
- Developed web interface that would allow users to drill down and see how the storage was being used (by client, by server, by data center, by storage type).
- Developed multi-threaded backend daemon which connected to the various storage systems and gathered the data about the stored data for reporting.
- Developed backend daemon that pushed aggregate data to the billing system, allowing billing to finally happen for all clients.

### PyTyler - Tyler POS to PostgreSQL Migration Tool

| | |
|---|---|
| **Period** | 2007, 2011 |
| **Company** | 6th Avenue Electronics |
| **Tools** | Python, PostgreSQL, Tyler POS System |
| **Platform** | HP-UX, Debian GNU/Linux |

Tyler is a point of sale system used by many smaller retail establishments. Tyler stores data in a set of proprietary ISAM files. These files do not have a modern access tool available (such as Crystal Reports) to perform reporting.

The users needed an easy way to report on the data, and this meant a tool was needed to copy the data from the on-disk files into a formal SQL server of some variety. In less than a month, I wrote a tool in Python to read the Tyler data files and load the information into a PostgreSQL database on a nightly basis.

This tool copied the entire database, comprising approximately 36,000,000 records, 140 tables, and 22 gigabytes of disk space. The program worked by reading the structure definition from the configuration files and recreating the structure in PostgreSQL. PyTyler would then read each table, row by row, parse the data in the row, and load it into PostgreSQL server.

This allowed the users to use standard ODBC drivers to access and report on the data.

- Developed a tool to read configuration of ISAM files, and generate SQL "create table" statements mirroring the structure of the file.
- Created a specialized reader class which could read the data stored in the ISAM table.
- Developed small web server application to provide status page for administrators while migration tool runs
- Reduced total run time from 13 hours to 5 hours by converting the entire application into a multi-threaded application.
- Verified that data is being copied into the system correctly.
- Tyler POS system was in production until the closure of the company in December, 2011, so data copy ran every night to bring in updated data from previous day's activities.

### VMWare Implementation

| | |
|---|---|
| **Period** | 2005-2007 |
| **Company** | 6th Avenue Electronics |
| **Tools** | VMWare Virtual Infrastructure 3, VMWare Virtual Center |
| **Platform** | Linux (Various distributions), Windows Server 2003 |

6th Avenue Electronics, like many companies, had a growing need for individual servers for various internal services. They chose to implement VMWare to reduce hardware costs, downtime, and environmental costs.

- Installed and configured iSCSI based SAN disks.
- Installed and configured all aspects of VMWare Virtual Center and VMWare Virtual Infrastructure 3.
- Developed (and tested) virtual machine templates to allow rapid deployment of new virtual servers using various operating systems (Windows XP, Windows 2003, Debian GNU/Linux, RedHat Linux).
- Monitored daily usage of VMWare hosts.