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Experience:

Linux distros, Linux kernel, FOSS builds, FOSS licenses, CCPA, cloud services, containers, device drivers, digital forensics, editor, edutech, gamedev, git, HIPAA, image processing, legacy codebases, medical devices, Point of Sale, recruiting, regex, SaaS, SQL databases, teaching, tech support, tech writing, U.S. Vote, virtual agent, VM and VPS, webdev

Education:

- * National Merit Scholar
- * High Honors in Mathematics at U.C. Berkeley
- * Honors in C.S. at U.C. Berkeley

Notable projects:

- * Sole software developer for 50% of the U.S. Vote (1981)
- * Developed the device that the DTIC used to convert the government's microfilm (1982)
- * I designed one of Adobe's printer protocols (1990)
- * 'C' compiler developer for Rockwell rocket launches (1990s)
- * Anti-terrorism for U.K. NCIS (2001)
- * Fighter-jet database for Northrop-Grumman (2004 to 2009)
- * Restructured part of a corporation named WHI (2014)

The U.S. Vote work was through C.E.S. in Berkeley. I was responsible for BMX and Ballot Tab software. The man in charge was P.J. Lyon, who can be Googled.

Software languages: 'C', Perl, PHP, Python 2 and 3, Go, bash, PowerShell, Forth, FORTRAN, Java, JavaScript, Lua, R, Ruby, Tcl

Data languages: MariaDB and MySQL, MS-SQL, SQLite3, PostgreSQL, JSON, CSS 3, HTML 5, XML, XSLT, YAML

Operating systems: Linux, BSD UNIX, Windows 3 through 11, SunOS 4, Solaris, MS-DOS, DEC VMS, Data General RDOS and AOS

Representative roles and projects. This is a partial list:

1981 to 1999: IPT Corporation. Location: Palo Alto, CA.

IPT sold standard software products, including the official compilers for some Data General and Rockwell systems, assemblers, debuggers, source-code analyzers, and a word processor that was the ancestor of WordPerfect. I wrote, worked on, and/or managed many of the products.

The company also did custom projects for firms or agencies such as Adobe, Boeing, Data General, Disney, Motorola, Rockwell, and the Defense Technical Information Center.

Interesting projects at IPT:

An associate of the CEO's, P.J. Lyon, was a lead at a firm named C.E.S. that handled BMX and Ballot Tab voting machines. I'm told that they represented 50% of the U.S. Vote. In 1981, I served as sole software developer for those product lines. A typical task was to find out why 1 vote in every 65,536 was disappearing. That issue was a 16-bit roll-over.

In 1982, the DTIC decided to convert the U.S. Government's microfilm records to microfiche. I wrote the OS used to drive a large camera for the task. It was 400 pages of dense assembly code and no bugs ever turned up. That was my favorite project.

Other projects included GUI layers for CLI tools, embedded operating systems from scratch, a Photoshop ECG plugin, email clients, multimedia transcoders, anti-virus software, custom servers, electronic circuit netlist tools, refactoring of legacy code, and PC BIOS work.

After the Web came in, starting in the early 1990s, I did the web pages and handled other aspects of the company's web presence.

We sold software products to companies that ran SunOS and Solaris on Sun workstations, VMS on DEC VAX, and AIX and other UNIX derivatives. Primary development took place on our Suns. In the early 1990s, though, we switched to Linux running on 486s and never looked back.

Linux worked well as a replacement for Solaris but one developer was unhappy because he couldn't make the big Sun monitors work with PC EGA cards.

I used Slackware initially but I made enough changes that by 1996 I'd started Laclin, my own Linux distro. My distro reached a MVP state in the mid-2000s and I've used it for most of my non-Windows development since then.

After I left IPT, I was told that I'd been considered a mentor to the junior developers at the firm.

1999 to 2003: Cleanscape. Location: Palo Alto, CA and San Jose, CA.

IPT shut down during the dot-com boom. The company's products were sold to a spin-off named Cleanscape and I worked on them there.

I was the sole software engineer employed at Cleanscape for 4 years, excluding Board members and Russian contractors.

My responsibilities included bug fixes, manuals, mock-ups for investors, GUI and Internet layers for old products, design of new products, databases, IT, web and FTP sites (both servers and content), support calls, sales calls, marketing, and management of the contractors.

2004 to 2008: Northrop-Grumman MILES project. Location: Remote.

I worked part-time for the 2nd half of the 2000s on a fighter-jet database appliance. The codebase included both new modules and modified Open Source frameworks.

My part included a Perl server, written from scratch, that collected binary data from upstream devices, stored data using SQL, and relayed it to client software as XML over HTTP. Client software included both standard web browsers and a Java GUI that I created.

The system generated its own documentation and outputted the documentation in HTML, PDF, and text format. The project included a hardware simulator written in Perl. MySQL, PostgreSQL, and SQLite3 were all supported as database back-ends.

My primary contact stated that he was “extremely impressed by the quantity and quality of your work”. He added that he’d learned more from me in one quarter than he’d learned in years of company-mandated classes.

2010: Patent Savant.

In 2010, I was asked to serve as architect for a startup named Patent Savant.

Patent Savant planned to sell services to attorneys related to the analysis of U.S. Patent Office data. The concept was that the company was going to calculate odds related to reexaminations based on a probabilistic model.

At the time, the USPTO was trying to monetize public data. The head of the USPTO directed staff to set up technical barriers to limit access to the data. My job was to get through the barriers.

I used dozens of Tor processes running in parallel to bypass IP-address restrictions and a semi-autonomous Perl agent to persuade the USPTO that human interactions as opposed to automated downloads were taking place. The Perl agent downloaded USPTO web pages, extracted gigabytes of data, and moved it into a MySQL database.

2012: Sleek Media. Location: Remote.

Sleek Media, a firm in Scotland, hired me in 2012 for a full-stack webdev project. The project was unusual in that it was based on a Perl framework. Perl is fine for webdev, but it had fallen out of favor in the 2000s. The company had had the framework developed by another firm that hadn’t completed the job.

Quote from my Elance review:

“OldCoder was meticulous in his communication. His knowledge of the field was second to none. He was a pleasure to work with and his calm, methodical approach served to provide focus in a time of stress and tight deadlines.”

2000s to 2010s: Geo-Temp. Location: Remote plus Newark, CA.

I was associated on a part-time basis with a startup named Geo-Temp from the 2000s to the mid-2010s. This was the venture named “Geo-Temp” that was run by Dr. Nancy Del Grande of Lawrence Livermore and not the staffing agency named “Geotemps”.

Geo-Temp sought to market services based on dual-band infrared data as interpreted using the principles of thermal inertia. Applications included the detection of underground tunnels, pockets of natural resources, and flaws in bridge decks.

My role was to vet abstracts for technical journals, to edit proposals and reports, and to assist with IT.

Summer 2014: Unnamed startup. Location: Remote plus Emeryville and Sacramento, CA.

In mid-2014, I was offered a role with a startup in Emeryville, CA. The startup turned out to be unfunded and folded after a few months. But one part related to AWS and Heroku is interesting.

Heroku seemed deficient. I didn't see that it offered much over AWS taking the cost into account. However, the group liked Heroku because it had push-to-deploy. So, one day in June, I rehosted the project and used git hooks to emulate the feature. People were pleased and the change was accepted by consensus.

Part of the deal for this project was that I'd teach the CEO's son webdev so that he could join the startup. I commuted to Sacramento for that part.

Fall 2014: World Health Industries. Location: Jacksonville, MI.

In the Fall of 2014, I was asked to fly to Jacksonville, MI to deal with an organizational issue at World Health Industries. The gist was that the company was going to split down the middle due to a conflict at the Board level.

I interviewed employees, analyzed the company's IT and software development processes, and wrote a 15-page report. The report offered management recommendations related to a reorganization. The document was reviewed closely by the Board and was well-received.

Subsequently, WHI offered me a role in a spin-off named ATXWare. However, the FBI shut down WHI due to financial irregularities before the venture moved forward.

2014 to 2015: Luckys Market. Location: Remote.

Luckys was a small supermarket chain. This was a startup in the supermarket sector and not the better-known Lucky Supermarkets.

I was employed by the corporate office during a transitional period as the chain's sole software developer. These were my projects:

- 1) I created a web framework based on PHP5, MySQL, Bootstrap, and jQuery. The framework allowed managers to view and edit POS data remotely through a web interface.
- 2) I analyzed the chain's processes and reimplemented five of them outside the POS system. My software reduced the workload of the chain's data-entry team by 90%.
- 3) I created a new pricing analysis tool. This tool reported the effects of vendor cost changes based on product movement numbers and added recommendations for retail prices based on price-point rules and

profit margin goals.

If you connect with me at LinkedIn, you'll find a recommendation for the Luckys work. This is a quote from the recommendation:

“The one piece I was missing was a developer that could handle anything from programming and web support to SQL development. Bob was able to do it all. Bob always looked at the big picture, figured out the root causes, and was always loyal to the business, to his team, and to me.”

2015 to 2016: Mr. PHP. Location: Remote.

I did a few webdev projects for Mr. PHP in South Australia. Tasks included an XML import feature for OpenCart, enhancements to a CakePHP-based system for auto repair shops, and content fixes and updates for a medical website. As part of this work, I contributed to upstream OpenCart.

2018 to 2019: Topica Plus. Location: Remote.

In the late 2010s, I worked for about 9 months with a would-be MailChimp competitor. The company had purchased the rights to a legacy Perl codebase that included a Web front end and a back-end that talked to email servers.

My role was to fix up the legacy codebase. I also handled related dev-ops and IT work, including the design of a robust DNS setup and a migration of 6 servers from Hurricane Electric to AWS in one week-end towards the end.

2010s: Firehouse Subs. Location: Remote.

I was associated with a restaurant chain named Firehouse Subs or FHS. For that role, I reported to the VP of IT and worked in a number of areas as needed.

The most interesting FHS project was an email framework, done from scratch, that monitored online purchases and sent promotional offers 2 hours afterward. I wrote my version of the framework in 2 weeks in 2018. In 2020, FHS transferred the project to an outside vendor. That group took 7 months to duplicate the work that I'd done in the 2 weeks.

I analyzed transactions to detect fraud and to debug problems with Online Orders, restructured the chain's RPOS transactions database, and produced analyses of additional types. The database restructuring included deduping a half-billion rows using a Perl DBI tool of my own design. I did server-side optimizations for that database as well.

2021 to 2022: Xconn Technologies. Location: Remote.

Most recently, I worked in dev-ops and software development for a short-term hardware project related to PCIe. My role was to fill in gaps related to the Linux kernel and other FOSS contexts such as containers and virtual machines.

The most interesting part of this role was that I had a Linux kernel patch accepted. The patch was minor but acceptance meant that the team could aim to support vanilla kernels as opposed to requiring OEMs to do custom builds.

Examples of other tasks for this project included:

Set up a containerized build procedure so as to support arbitrary target distros. Extend the API for a server-client framework. Note: That was a prototype CXL fabric manager. Sample code to demonstrate access to PCIe device memory using different mechanisms. Explain how to set up and use reverse ssh tunnels. QEMU tasks such as factor out a QEMU backing file and use of guestfs-tools to repartition a QEMU VM.

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