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Career Summary

- Professions:
  - Senior Software Engineer
  - Platform Engineer
  - Live Ops/Ops Engineering
  - Senior Server Engineer
  - Senior UI/UX Engineer
  - Systems and Network Administrator
- Industries:
  - Games Industry
  - Web Site Development
  - Management Information Systems
  - Cellular and WiFi/BT Testing
  - Disaster Simulation
  - Information Technology

Skills

<u>Language and API Technologies</u>

C	*Expert*	.NET/VB/Visual C++	*Strong*	ARM/Thumb Assembly	*Moderate*
HTML/XHTML	*Expert*	Python	*Strong*	Boost	*Moderate*
JavaScript/ECMAScript	*Expert*	jQuery/jQuery UI	*Strong*	Lua/Lua API	*Moderate*
DHTML/AJAX	*Expert*	RPGIII/RPGLE	*Strong*	MSBuild	*Moderate*
PHP	*Expert*	TCL/Tk	*Strong*	PS2 VU Assembly	*Moderate*
JSON	*Expert*	Crystal Reports	*Strong*	QML	*Moderate*
Sunplus ISA Assembly	*Expert*	MATLAB/SIMULINK	*Moderate*	Windows Batch	*Moderate*
C++/OOP	*Very Strong*	sh/bash/ksh Scripting	*Moderate*	Xcode	*Moderate*
BASIC/QuickBASIC	*Very Strong*	CLP (AS400)	*Moderate*	MFC	*Light*
CSS	*Very Strong*	CGI	*Moderate*	AppleScript	*Light*
XML	*Very Strong*	LZMA/LZW/Zip	*Moderate*	CMS	*Light*
SQL/MySQL/SQLite	*Very Strong*	Makefile	*Moderate*	CURL	*Light*
6502/6510 Assembly	*Very Strong*	MIPS Assembly	*Moderate*	DirectX	*Light*
Qt	*Strong*	OpenGL/OpenGL API	*Moderate*	Java	*Light*
ImageMagick	*Strong*	PERL/Tk	*Moderate*	Objective C	*Light*

<u>General Abilities</u>

Mathematics	*Very Strong*	Tool Design	*Very Strong*	Network Administration	*Strong*
Software Testing	*Very Strong*	Sketch Artist	*Strong*	Game/Gameplay Design	*Strong*
User Interface Design	*Very Strong*	Graphical Layout	*Strong*	Apache	*Moderate*
Algorithm Design	*Very Strong*	Controller Design	*Strong*	Firewall Design	*Moderate*
Application Design	*Very Strong*	Network Management	*Strong*	DNS Configuration	*Moderate*
API Design	*Very Strong*	Physics Modeling	*Strong*	Windows NT Admin.	*Moderate*
Linux Administration	*Very Strong*	System Modeling	*Strong*	Auto. Build Systems	*Light*

<u>Platform Programming Experience</u>

Linux/Unix	*Very Strong*	Sunplus SPG2xx SPG290	*Strong*	Playstation	*Moderate*
Commodore 64	*Very Strong*	Gameboy DS	*Strong*	Gameboy Advance	*Moderate*
Web	*Very Strong*	Wii	*Strong*	osCommerce	*Moderate*
Playstation 2	*Very Strong*	OS/Kubernetes/Docker	*Moderate*	Splunk/Grafana/Kibana	*Light*
Windows	*Very Strong*	i5/AS400/System 38	*Moderate*	iPhone / Android	*Light*
MacOS X	*Strong*	MacOS Classic	*Moderate*	X-Box	*Light*

Experience

- **Activision Blizzard** (full-time remote) – *Irvine, California* — *November, 2020 ~ June, 2023*
  Senior Sever Engineer; Live Ops/Ops Engineering: Blizzard Entertainment, Hearthstone
  - Investigated player issues that CS could not fix and perform live production data healups in Oracle SQL.
  - Wrote automated player data migration service to migrate old player data, which worked in conjunction with login, in C++, Oracle SQL.
  - Optimized and maintained code profiling library that ran on live production in C++.
  - Integrated all feature gate variables into company's monitoring library in C++.
  - Updated company's networking routing library and migrated API to new version in C++.
  - Updated various internal and third party libraries in C++, Oracle SQL.
  - Created API to link Optimizely to game to configure computer players in C++, HTML, JSON.

- **Machine Zone** – *Palo Alto, California* — *September, 2017 ~ July, 2020*
  Server Engineer: Distributed Backend for 6 MMO Mobile Games (Game of War, Mobile Strike, Final Fantasy XV, ...)
  - Maintained/improved codebase of distributed backend server systems in PHP, Lua, MySQL, sqlite developed in Docker containers.
  - Principal maintainer of server kernel including custom Object-Relational Mapping and Controllers in PHP, MySQL, sqlite.
  - Rewrote transaction rollback to support broader database modification that was aware of internal and external data caching in PHP & MySQL.
  - Added support for "soft" deletion of models/rows that deactivate instead of removing to improve overhead of volatile tables in PHP & MySQL.
  - Primary maintainer and deployer of device tracking system in PHP, MySQL running on OpenShift on Kubernetes and Docker.
  - Wrote GDPR/CCPA management and data wiping backend and handled wiping requests during development in PHP, MySQL, Python, bash.

- **Trion Worlds** – *Redwood City, California* — *June, 2014 ~ February, 2017*
  Platform Engineer, Glyph: Platform Launcher for Login/Auth and Downloading, Decompression, and Patching of Multiple Games
  - Updated/improved Glyph on Windows, MacOS X in C/C++, Qt, QML, JavaScript, CURL, LZMA, Zip, company STL and common libraries.
  - Updated company STL and common libs on Windows, MacOS X in C/C++ including STL, text manipulation, memory & process management.
  - Set up process to rebuild Qt and OpenSSL from source to target Windows XP on Windows using VS 2013 in Windows Batch, Makefile.
  - Reworked project files and install builder for more efficient build on Windows, MacOS X in MSBuild, Windows batch, AppleScript, bash.
  - Updated company build server client for Windows and created build of and automating of MacOS X builds in Python.
  - Updated and built existing mobile authorization apps on iPhone and Android in Objective C and Java.

- **LitePoint** (a division of Teradyne) – *Sunnyvale, California*   *May, 2012 ~ May, 2014*
  Senior Software/UI/UX Engineer
  - **Test Plan Editor:** Cellular and WiFi/BT Test Plan Creation and Editing Software Tool
    - Wrote from scratch based on UI layout request and existing file format in JavaScript, jQuery, jQuery UI, HTML, CSS, QtWebKit, C/C++, Qt.
    - Created API to access company SDK (in C/C++) through JavaScript/jQuery using QtWebKit with a HTTP request fallback.
    - Developed future file format and created module to convert file formats in Python.
    - Contributed to improvement of company SDK and plug-in modules in C/C++, Qt, JSON, and Python.
    - Learned about RF testing of cellular and WiFi/Bluetooth devices.

- **Contracting / Self-Employment**   *March, 2010 ~ December, 2012*
  - **Bloomberg LP:** Senior Software Engineer; *August, 2011 ~ October, 2011*
    - Worked in Trade Order Management Systems fixing back-end bugs in C/C++, JavaScript, and ksh.
    - Wrote Bloomberg terminal command to schedule and delete trade book tickets in C/C++, JavaScript, ksh, and SQL.
  - **Swann Costume Shop:** Lead Software Engineer; *June, 2011 ~ July, 2011*
    - Wrote customer and inventory database to track rentals and charge late fees in TCL/Tk and SQLite.
  - **FlipSwitch Solutions:** Lead Software Engineer; *February, 2011 ~ April, 2011*
    - Wrote custom course management and scheduling with user registration in PHP, HTML, and CSS.
  - **LaFrance Corporation:** Senior Software Engineer; *July, 2010 ~ December, 2010*
    - Rewrote product upload tool adding robust error handling in Visual Basic .NET.
    - Finished osCommerce-based website largely in PHP, MySQL, HTML, CSS, and JavaScript including:
      - FedEx/UPS shipping API with label printing in object-oriented PHP, VB .NET and XML.
      - Interactive product view and searching that used JavaScript and JSON AJAX library.

- **Test & Evaluation Solutions** – *Warrenton, Virginia*   *July, 2009 ~ December, 2009*
  Senior Software Engineer
  - **Integrated Recovery Model:** Ship Disaster Recovery Modeling and Simulation for PC, Mac, and Linux
    - Rewrote and updated ship deck and compartment modeling program in TCL/Tk and SQLite.
    - Learned and participated in discussions about improving existing SQLite schema for ship data.
    - Wrote data conversion scripts.
    - Applied for and received Secret Level U.S. Security Clearance.

- **Barking Lizards Technologies** – *Richardson, Texas*   *January, 2008 ~ August, 2008*
  Senior Software Engineer
  - **Wii, Playstation 2, and PC Game:** Naked Brothers Band
    - Wrote Playstation 2 Controller API and missing-controller display in C++.
    - Wrote Playstation 2 Memory Card API and display in C++.
    - Wrote Wii Power, Reset, and Exit handlers in C.
    - Wrote Wii disc error handler and display in C and C++.
    - Wrote Wii Home Button Menu handler in C++.
    - Wrote common microphone API interfacing to each platform library in C++.
  - **Gameboy DS Game:** Bratz, Girlz Really Rock
    - Scripted one of the five chapters for the RPG-like story mode in LUA including API additions in C.
    - Wrote pause menu, options menu, and initial version of main menu in C++.
    - Added multiplayer features to one game in C++.
    - Added touch-slider and radio button classes to the game in C++.
  - **PC Proof-of-Concept Game:** Client-Server Network Test in C++ with a data conversion tool in C

- **LaFrance Corporation** (MIS Department) – *Concordville, Pennsylvania*   *August, 2006 ~ January, 2008*
  Senior Software Engineer
  - Designed and wrote many auto-generating product reports in Crystal Reports with AS400 SQL interface.
  - Wrote web interface to graphic department's Windows file share to aid design search in PHP.
  - Designed, wrote, and maintained many inventory and billing apps in RPGIII, RPGLE, and CLP on AS400.
  - Rewrote Benmatt website, cleaned up data, and documented it in PHP, MySQL, HTML, CSS, and JavaScript.
  - Wrote Design-Your-Own-Product dynamic web pages in PHP, MySQL, HTML, CSS, JS, and ImageMagick.
  - Designed and wrote first version of LaFrance corporate library in PHP, MySQL, HTML, CSS, and JavaScript.
  - Setup SSL certificate for one of the websites on a Linux-based host.

- **Contracting / Self-Employment**   *March, 2006 ~ January, 2007*
  - **Atomic Orange Productions:** Senior Software Engineer; *September, 2006 ~ January, 2007*
    - Worked on SPG288 based PnP game, Bratz at the Mall, in C and SPG2xx ISA Assembly.
    - Worked remotely with team of 2 engineers, musician, and producer.
    - Wrote 2 games and pause, help, level complete, and hardware diagnostics screens in C.
    - Designed and wrote sound driver (4-chan mapped music and 2-chan fx) in SPG2xx ISA Assembly.
    - Wrote simple fixed-point physics module in C.
    - Modified text output driver to support 2 sizes and special characters in C.
    - Optimized and resampled sound effects for ROM space efficiency using Audacity.
    - Gave advice regarding music/sound on Sunplus/GeneralPlus audio chips under ROM constraints.
  - **Cold Fusion Entertainment:** Technical Advisor; *March, 2006 ~ August, 2006*
    - Collected information and wrote documentation and code for SPG290 in C.

- **SDI Technologies/Kiddesigns** (Tech2Go Division) – *Rahway, New Jersey*   *November, 2004 ~ March, 2006*
  Lead Software Engineer; Technical Direction; Systems and Network Administrator
  - **Plug-and-Play Game:** TMNT Way of the Warrior (on embedded SPG220 system)
    - Worked with GDD writer and added to game design.
    - Wrote graphics encoding tool in C and provided supplemental artwork using GIMP.
    - Wrote 5 games, main menus, pause, intros, and outros in object-oriented C.
    - Wrote kernel (core) functions and game engine in object-oriented C, C, and SPG2xx ISA Assembly.
    - Wrote all drivers: sound, music, video, sprites, et cetera in C and SPG2xx ISA Assembly.
  - **SPG290-based Children's Game Consoles:** Wizdome Edutainment VGC & Handheld
    - Wrote multiple drivers including: sound, music, video, sprites, etc in C and SPG290 ISA Assembly.
    - Wrote some kernel (core) functions in C and SPG290 ISA Assembly.
    - Wrote some hardware documentation to supplement Sunplus docs.
    - Provided technical direction and provided hardware support to clients.
    - Trained new software engineer on Sunplus hardware.
  - **Tech2Go Internal/External Network**
    - Set up and maintained Linux-based server, switch, router, and PCs running Windows XP.
    - Set up: FTP, Samba, SVN, BBS, and archiving and backup scripts in Bash Script on a Linux host.
    - Began designing for developer website for use by clients.

- **Drexel University & School District of Philadelphia** (Partnership) – *Philadelphia, Pennsylvania*   *February, 2004 ~ September, 2004*
  - **Teaching Assistant:** Drexel University, University City High School, and Leidy Elementary
  - **Lab Tech Assistant:** University City High School
  - **Engineering Mentor for Robotic Club:** University City High School
  - **Administrative Assistant:** Broad Street Garage

- **Contracting / Self-Employment**   *April, 2003 ~ January, 2004*
  - **Fez Works:** Software Engineer; *April, 2003 ~ January, 2004*
    - Wrote 3D collision detection in C++ and performed data analysis in Excel with VBScript.

- **Ringing Hill Orchards** (Family Business) – *Pottstown, Pennsylvania*   *September, 2003 ~ November, 2003*
  Orchard Worker

- **Majesco Entertainment** (Pipedream Interactive Division) – *Edison, New Jersey*   *September, 2000 ~ March, 2002*
  Software Engineer
  - **PS2 Games:** Soldier of Fortune & Star Trek Voyager: Elite Force
    - Wrote PS2 port of OpenGL (graphics library) on PS2 VU1 in C, PS2 VU Assembly, and DMA.
    - Wrote loading screens keeping load off main processor in C, MIPS Assem., PS2 VU Assembly, and DMA.
    - Wrote minimal MPEG (movie) player in C and PS2 MPEG Libraries.
    - Optimized inter-process communications (to lower data contention).
    - Final code optimizations (mostly involving graphics) in C, MIPS Assembly, and PS2 VU Assembly.
    - Ported some bone animation math to PS2 Vector Unit 0 in C and PS2 VU Assembly.
  - **Dreamcast Game:** Q*Bert
    - Wrote part of inter-executable API in C.
    - Designed high score font and a few minor graphics.
    - Wrote tool to extract and convert some game data in C.
    - Designed and wrote menus and menu effects in C.
  - **X-Box:** Began learning DirectX shaders on NVIDIA GeForce 3 in C and Shader Assembly.

- **Drexel University** – *Philadelphia, Pennsylvania*   *January, 2000 ~ June, 2001*
  - **Electrical and Computer Engineering Department Senior Design Coordinator**
  - **Teaching Assistant**

- **LaFrance Corporation** (MIS Department) – *Concordville, Pennsylvania*   *March, 1997 ~ September, 1997; March, 1998 ~ September 1998*
  Software Engineer; Systems & Network Administrator

- **Allegheny University of the Health Sciences** – *Philadelphia, Pennsylvania*   *September, 1995 ~ March, 1996*
  Software Engineer; Web Designer; Software Tester and Trainer

- **Ringing Hill Orchards** (Family Business) – *Pottstown, Pennsylvania*   *September, 1992 ~ February, 1993; September, 1993 ~ February, 1994*
  Orchard Worker

Education
- **Drexel University** – *Philadelphia, Pennsylvania*   *September, 1999 ~ 2001*
  Masters of Science in Computer Eng. (Computer Controls)   Thesis: "Self-Erecting Pendulum: An Example in Computer Controls for Undergrads"

- **Drexel University** – *Philadelphia, Pennsylvania*   *August, 1994 ~ September, 1999*
  Bachelor of Science in Electrical Engineering (Systems and Controls)   Minor in Computer Science
  Bachelor of Science in Computer Engineering   GPA: 3.713, Magna Cum Laude, Distinguished Honors