

Jason C. McDonald

Software Developer | Author | Project Manager

<https://indeliblebluepen.com/>

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Coeur d'Alene, Idaho

Expert in Python and C++, with experience in debugging, refactoring, software design, and advanced use of object-oriented and generic programming paradigms. Ubuntu power user, LAMP IT, and computer repair technician. Experienced project manager with a background in communication.

Technical Skills

- **C/C++:** Applying advanced C++14/17 and classic C/C++ principles to design libraries and implement features with efficient, memory-safe code. Diagnosing and debugging difficult errors, especially undefined behavior. Code refactoring and modernization, memory management, algorithmic efficiency, and advanced debugging techniques.
- **Python:** Experience implementing desktop applications using Python (2.7, 3.x) alongside various GUI libraries, including PyGObject (GTK), Kivy, and PySide2 (Qt5). Code refactoring and modernization.
- **Additional Programming:** Skilled in Bash script development and use in production environments. Working proficiency with Java, Visual Basic .NET, SQL. Designed websites in pure HTML 5 and CSS 3. Prior expertise in ActionScript 3.0.
- **LAMP servers:** Configured and maintained public-facing, access-controlled servers from bare metal with Ubuntu Server, using latest best security practices; withstood eight-month distributed denial-of-service attack. Experience with Bash, Apache, MySQL, PHP, Git server, SSH, LDAP, Let's Encrypt. Have deployed and maintained over two dozen server applications, including Nextcloud and Phabricator.
- **Mail servers:** Implemented LAMP-based business-class email servers following latest best practices, using Postfix, Dovecot, SPF, DKIM, SpamAssassin, SquirrelMail, and Rainloop.
- **DevOps:** Implemented entire DevOp stack and workflow for remote development team, using Git, Phabricator, Jenkins, Oracle VirtualBox, and GitHub. Designed organization-wide standardized C++ build system using CMake, Makefiles, and multiple compilers, linters, and static analyzers. Documented best practices, maintained system. Additional experience with Subversion, Mantis, and Redmine.
- **Team and Project Management:** Organized multiple teams, developed and implemented standards, trained interns. Designed and managed administrative processes.
- **Hiring:** Conducted phone and in-person interviews of candidates for various development and non-development positions. Trained others in hiring techniques and best practices.
- **Technical Writing:** Written documentation for libraries/APIs, DevOps processes and workflows, training material, and administrative policy documentation. Written multiple articles regarding software practices, project management, and software development, including the "Dead Simple Python" series on DEV.to.
- **Public Speaking:** Has presented at colleges, workforce training, and universities on software development careers and best practices.

Selected Professional Experience

MousePaw Media [May 2010 - Present]

CEO, Lead Developer – Managing programming department. Hiring and training software development interns during their year-long internship; cooperating with universities in implementing internships. Managing multiple open source projects and teams, maintaining production/email and development servers, implementing and overseeing DevOp processes and workflows. Project history includes...

- Oversaw development of Onestring, the first fully UTF-8-compatible string class in C++ also capable of interfacing natively with std::string and char.
- Lead development of Flex, a set of C++ data structures with better performance than their identical standard library counterparts (e.g. std::vector).
- Designed Goldilocks testing library and IOChannel output/logging utility.
- Oversaw initial specification and design work on game engine, vector animation engine, and scripting language.
- Developed and published Commenting Showing Intent and Quantified Task Management standards.
- Designed game and application prototypes in Adobe Flash/ActionScript 3.0.

Independent Author [January 2017 - Present]

Authored numerous articles on Python, C++, and project management, most of which are available on DEV.to.

- Wrote popular "Dead Simple Python" article series, introducing the Python language to developers coming from other language.
- Under contract with No Starch Press for "Dead Simple Python" book, which covers the Python programming language in depth. Geared towards existing developers who want to learn the Python, or who wish to improve their understanding of the language.
- Under contract with No Starch Press for a book covering advanced debugging techniques in C++.

North Idaho College [August 2013 - January 2015]

Peer Tutor – Tutored Pre-Algebra, Algebra, Trigonometry, Pre-Calculus, Computer Science, and Psychology.

- Helped students improve study skills, leading to an average class GPA improvement of 1.5-2.0.
- Recommended directly by multiple professors.
- Developed math tutoring print resources adopted by other peer tutors.
- Served as spokesperson for peer tutoring department during new student orientation events.

Computer Repair Technician/IT (Independent) [2006 - Present]

- Building and repairing desktop and laptops of all makes and models. Performing system tune-ups and re-installations, virus and malware removal, and data recovery. Experienced with Microsoft Windows (98 through 10), Ubuntu/Debian and other Linux distributions, and Mac OS X/macOS.
- Renovating old computers for charitable reuse; disassembles electronics for proper recycling.
- Training users in various computer skills, internet safety, privacy, security, and open source software. Have developed and taught full user training courses in Windows XP and Microsoft Word 2016 in volunteer capacity.
- Designing and implementing websites, mail servers, and development servers.

Selected Volunteer Experience

DEV.to [December 2018 - Present]

Tag Moderator – Define and enforce tag policies for multiple popular tags. Help promote excellent content. Resolve community conflicts diplomatically.

Washington State Opportunity Scholarship [September 2019 - Present]

Skills that Shine Mentor – Mentor WSOS students in professional development, resume and job interview skills, and professional networking.

Qub3d Project [February 2018 - May 2018]

Community Director – Coordinated open source development community for new project. Advised on project management. Designed and implemented initial development workflow. Moderated community. (Owners ended project for personal reasons unrelated to project.)

Education

North Idaho College [Non-Degree]: Interpersonal, intercultural, and non-verbal communication, public speaking, general psychology.

- Dean's list, Spring 2013 and Fall 2013.
- Recipient of 2013-14 Outstanding Student in Communication Department Award.

Portfolio: github.com/codemouse92

Articles: dev.to/codemouse92