

Experience

Freelance Software Engineer

{Missoula, Montana}

May 2009 - Present

- * Working on FOSS projects.
- * Building bots for Slack and Discord.
- * Developing and maintaining web applications for local, domestic, and international clients.

Software Engineer **Submittable, Inc.**

{Missoula, Montana}

September 2019 - Present

DevOps Management:

- Managing software development lifecycle and deployment of all production systems via AWS CodePipelines.
- Communicating release status of all products via automated GitHub release notes integration with Slack.
- Creating, maintaining, and debugging test and production environment infrastructure in AWS CloudFormation via the serverless framework (<https://www.serverless.com>).
- Creating, maintaining, and debugging build automations via AWS CodePipelines.
- Automating DevOps workflows via AWS EventBridge and Lambdas.
- Managing accounts and permissions in AWS IAM.
- Reviewing and Merging GitHub Dependabot pull requests.
- Managing SecOps work via AWS Certificate Manager, EC2, ELB, and RDS.
- Managing scalability automation via AWS EC2 / ELB.
- Managing domains via AWS Route 53.
- Managing AWS CloudWatch Alarms, debugging production systems, communicating potential bugs or fixes with dev team, and conducting emergency deployments or rollbacks during outages while on-call.

CTO **TOMIS, Inc.**

{Missoula, Montana}

September 2016 - July 2019

Technical Lead:

- Owning the product design from the executive vision stage to the technical implementation.
- Driving design and development of technical specifications.
- Creating realistic expectations and strategies to accomplish short and long-term goals.
- Research and development on the latest technology.
- Building prototypes and proof-of-concepts on new technology.
- Leading back-end team in design, development, and quality assurance of REST API in Python/Django.
- Quality assurance and assisting in design decisions on front-end React.js application.

Project Management:

- Scrum master: all Jira design, organization, and management.
- Typical Agile environment with daily standups and weekly sprint/scrums meetings.
- Jira issue board design, creation, curation, and triaging.
- Repository management in Bitbucket.
- Team communication and integration automation using Slack.
- Confluence documentation planning, organization, and development.
- Using Jira NextGen Kanban project with product roadmap feature to prioritize epics.
- Using Confluence's Jira templates to write release notes from Jira releases.

DevOps Management:

- Managing software development lifecycle and API lifecycle.
- Developed rules to manage commit quality, such as requiring ticket numbers with all commits.
- Developed rigorous code review process with branch management rules in place for approval of pull requests.
- Using feature and release branches to manage healthy feature releases and hotfixes.
- Utilizing Bitbucket build pipelines to manage automated testing of feature branches.
- Using Jira and GIT to manage release tagging.
- Customer feedback and visual bug tracking through Usersnap.

Site-Reliability Engineering:

- Application performance monitoring using DataDog and Honeycomb.
- Logging, host statistics, infrastructure monitoring, and incident detection using Stackdriver and DataDog.
- Exception reporting and ticket creation using Sentry with Jira integration.
- Uptime monitoring and alerting using UptimeRobot and Stackdriver.
- Incident handling, statuses, and post-mortems through Statuspage.io.

Co-Founder, CTO **dotmos, LLC.**
{Missoula, Montana}

July 2015 - January 2017

- * **Technical Lead:** driving design and development of technical specifications for key features and tools.
- * **Lead Software Engineer:** front-end and back-end design and development. Used Django, Node.js, and React.js.
- * **Project Management:** development team leader, repository management, issue curation, documentation generation, team communications, and data analysis. Used BitBucket/GIT, Asana, DeployBot, Intercom, Usersnap, Open Analytics, and Slack.

Data Scientist, Software Engineer, etc. **Upstream Research, Inc.**
{Missoula, Montana}

November 2015 - September 2016

- * **Data Scientist:** acquisition and analysis of large geographic-based data sets and creating and updating services in ArcGIS.
- * **Software Engineer:** writing and testing automation scripts in Python and ArcPy; developing ASP.NET application using the MVC framework in C#; designing and implementing unique solutions to novel problems; and writing and supporting custom functions in PostgreSQL.
- * **Quality Assurance:** user-testing, writing reports, writing custom scripts in Python to test REST API endpoints, and load-testing pages and REST API endpoints.
- * **System Administration:** deploying software releases, ensuring server up-time complied with SLA, security updates and patches, and managing Azure resources. Used Azure and Visual Studio.
- * **Customer Support:** interfacing directly with customers and debugging customer and software issues. Used Freshdesk.

Security Consultant **Lake Missoula Group, LLC.**
{Missoula, Montana}

February 2015 - May 2015

- * Handled a diverse client base including banks, hospitals, and retail outlets.
- * Conducted a variety of engagements including:
 - . Internal and External Vulnerability Assessments (IVA, EVA).
 - . Internal and External Penetration Tests (EPT, IPT).
 - . Web and mobile Application Security Assessments (WASA).
 - . Wireless Infrastructure Assessments (WIA).
- * Wrote detailed reports and presented results for each type of engagement.
- * Performed tech reviews on assessments conducted by other consultants.

Senior Software Developer **Hanna-James Enterprises, LLC.**
{Missoula, Montana}

July 2014-February 2015

- * Developed Terminal-Based Test Automation Software in Python.
- * Designed GUI-Based Test Automation Software in Python using GTK and wrote specification documentation in \LaTeX .
- * Developed proof-of-concept prototype for D3-based ToR Network Tracking software in Coffeescript.
- * Wrote specification document for GUI-Based SDK Architecture in \LaTeX .
- * Designed and implemented entire MySQL database for SDK toolkit and implemented a data abstraction layer in Python with distinct connectors for loading the GUI, expanding a specified tool, building a tool for insertion into the database, and setting up the toolchain for execution.

Teaching

Teacher's Assistant **Programming Languages**

Spring 2012

Teacher's Assistant **Computer Ethics**

Fall 2011

Instructor **Computer Modeling**

Fall 2010 - Spring 2011

{**University of Montana-Missoula**}

* Taught freshman and sophomore students advanced features of Microsoft Excel and Access and assisted them during labs.

* Graded all assignments, papers, and exams. Also, maintained office hours to be available out of class for individual tutoring and fielding questions from students.

Mentor **The Firehose Project**

Fall 2014 - Fall 2015

{<https://thefirehoseproject.com/>}

* Assisted assigned students by answering questions and working through code samples during weekly one hour online video sessions.

* Assisted assigned students by being available for question and code sample walkthroughs via email during regular office hours.

* Participated in online video group discussions surrounding larger projects.

Education

University of Montana-Missoula

M.S. Computer Science, emphasis in Machine Learning, Data-Mining, and Simulations

May 2014

University of Montana-Missoula

B.A. Psychology, minor in Math, Media Arts

May 2010

Technical

Languages

* **Proficient:** \LaTeX , Python, Bash, JavaScript, Matlab, R, Markdown

* **Familiar:** C/C++/C#, Coffeescript, OCaml, Perl, Ruby

* **Willing to Learn:** Dart, Go, Haskell

* **Prefer not to use:** PHP, Java

Frameworks

* **Proficient:** Django, Django REST Framework, Flask, ASP.NET

* **Familiar:** Elasticsearch, React.js, Vue.js, Node.js

Favorite Python Modules: BeautifulSoup4, Celery, Matplotlib, NumPy, ØMQ, Pandas, Redis, Requests, SciPy, Scrapy, Spyder

Automation / Multitasking: Celery, Redis, RabbitMQ, ØMQ

Machine Learning: Keras, PyBrain, PyTorch, Scikit-Learn, TensorFlow

Data: Access, CSV, JSON, MySQL, PostgreSQL, RESTful APIs, SQLite, SQL Server, XML, YAML

Data Visualization: D3, Matlab, Matplotlib, R

Design: Twitter Bootstrap, HTML5/CSS3/Sass/Less, Invision

DevOps: Atlassian (Jira, Confluence, Statuspage, Bitbucket Pipelines), Azure, Bitbucket / GitHub (GIT), DeployBot, Docker, Google Cloud Platform, Kubernetes, Mercurial

Development Environments: Atom, Android SDK, PyCharm, SublimeText, VIM, Visual Studio / VSCode, XCode

Development Techniques: Agile Methodology using the Scrum or Kanban frameworks, Behavior-Driven Development, Iterative and User-Centered Design, Rapid Application Development, Test-Driven Development

Communication: Discord, Google Hangouts, IRC, Join.me, Skype, Slack, UberConference, Zoom

APIs: Darksy, Discord, Facebook, Google (Ads, Analytics, Maps, Places, Search Console), Instagram, Mailchimp, Pinterest, Rebrandly, Rezdy, Slack, Twilio (SMS / SendGrid), Twitter, Web CEO, Xola

Bots: Discord, Slack

Network Security: Aircrack-ng, Burp Suite Pro, Kali Linux, Kismet, Metasploit Framework, Nessus, NeXpose, Nmap, Wireshark/tshark

Operating Systems: Debian and Red Hat-based Linux, Mac OS X, Windows

Selected Projects

A list of some of my favorite personal and graduate projects, not specifically listed in my work experience, that I had the most fun on. The source code for most of the following projects is on GitHub @[blairg23](#). The rest may be in private repositories on Bitbucket [blairg23](#).

Grad Projects

Bak-Tang-Wiesenfeld Model for Displaying Self-Organized Criticality

Also known as the Abelian Sandpile Model, this Python/Matplotlib application simulates sand being poured on a single point.

Earthquakes

A Python script to plot earthquakes that have occurred in the world, using the Matplotlib Basemap module.

Hoot, aka The Wolf Box

A hardware/software solution for broadcasting and recording sounds in adverse climates.

Particle Simulator

A particle physics simulator written in Python using the OpenGL libraries.

Personal Projects

bookmarks-manager

Bookmarks Tagr[®] is a full RESTful API for importing your Chrome bookmarks and creating a highly organized network graph of bookmarks and tags. Notable features include smart tagging, social sharing, up/down voting, and reporting bad links for removal.

BetterPassword

A short script to turn an easily remembered password into a large hashed password for better security in online applications.

create-api-wrappers

Reynold's RESTful Wrapper[®] is an application that creates API wrapper methods in Python from a list of API endpoints and their valid parameters.

delete-files

A short script to recursively remove all files within a given directory, given a regex match.

expense-analysis

Expensive[®] is an application that takes CSV files as input and builds a database of financial transactions to perform financial data analysis tasks, such as analyzing spending habits to build a budget.

files-in-folder

An application designed to perform an md5 hash-wise diff on files in two given directories. Outputs the contents of the folder (filenames and hash) and the diff as a CSV.

images-from-url

An application designed to scrape images off any given URL or REST API. On the last commit, it supported Imgur, Instagram, Tumblr, and any raw HTML website.

Nutflux

A suite of small applications centered around multimedia consumption, Nutflux[®] started as a Netflix clone for consuming your local multimedia collection. Now this suite contains multiple utilities for create a better multimedia experience.

movie-decider

An application that takes your current multimedia collection and helps decide what you want to watch based on a series of mood questions.

movie-file-fixer

An application for formatting poorly formatted movie filenames, adding a movie poster from IMDb, and adding subtitles based on the md5 hash of the file. Recent commits were a huge refactor to add test automations, unit tests, and CI/CD pipeline.

movie-tv-show-reminder

An application that reminds you when your favorite shows have new episodes or a new season.

movie-viewer

A Netflix clone that uses the Plex API to showcase your multimedia collection.

music-file-fixer

Like movie-file-fixer, but for music files.

rename-images-to-datetime

A short script to rename image files to a datetime format based on the datetime the image was produced. Can also format from one datetime format to another. Many cameras name their files like DSC.0001.png, even if that file has already been created. This script's objective was to create unique files based on that unique datetime format.

TweetyPy

A Python Twitter client with a wrapper method for every Twitter REST API endpoint. Powered by **Reynold's RESTful Wrapper[®]**.

Professional References

Submittable, Inc.

Lance Fisher - VP of Engineering - 406.370.9609

Nicholas Kirkos - Software Engineering Manager - 313.623.3373

TOMIS, Inc.

Evan Tipton - Founder, CEO - 404.217.1611

Michelle Jernigan - Director of Marketing - 404.384.7318

Shane Cavaliere - UI/UX Designer, Sr. Software Engineer - 406.544.8803

Aemil Estvold - Optimizations / Integrations Engineer - 406.396.1265

Cole Carter - Quality Assurance / Automations Engineer - 707.484.2228

dotmos, LLC.

Rod Austin - CEO - 406.396.0673

Gary Greyling - Senior Software Engineer - +64.210.541.798 (NZ)

Upstream Research, Inc.

Alex Philp, PhD. - Co-Founder, CSO - 406.370.2262

Jordan Larson - Senior Economist - 406.830.8807

David Bechtold - Senior Software Developer - 406.529.9606

Hanna-James Enterprises, LLC.

Misti and Dan James - President/CEO and Vice President - 406.546.4602

Bradley Bahls - Lead Project Manager, Senior Software Developer - 406.207.6351

University of Montana

Doug Raiford, PhD. - Professor, Computer Science Department - 406.243.5605

Joel Henry, PhD, JD. - Professor, Computer Science Department, Master's Defense Committee Chair - 406.243.2218

Jesse Johnson, PhD. - Professor, Computer Science Department Chair - 406.243.2356

Yolanda Reimer, PhD. - Professor, Computer Science Department, Master's Defense Committee Member - 406.243.4618

Johnathan Bardsley, PhD. - Professor, Mathematics Department, Master's Defense Committee Member - 406.243.5328