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### Summary

I am an experienced Software Engineer with a passion for guiding organizations toward success. I specialize in dispelling uncertainty and cultivating a shared understanding across teams.

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| Personal Site | <https://brianlauber.com/> |
| GitHub | <https://github.com/briandamaged/> |
| LinkedIn | <https://www.linkedin.com/in/brian-lauber-26197919/> |

### Professional Experience

#### Principal Software Engineer Plutometry Corporation

October 2019 – January 2024 | June 2024 – August 2024

Python, Java, C, Bash

AWS, Azure, Packer, Terraform, Kubernetes, Docker, Podman

Numpy, Pandas, scikit-learn, ray, Jupyter, MLFlow, Flask, REST, OpenAPI, Celery, MySQL, MSSQL, SqlAlchemy, Pytest, unittest, JUnit, SonarQube, Hardware Security Modules, PGP, Cryptography, Hashicorp Vault, Git, Pip, Poetry, setup.py, VirtualEnv, Maven, GitLab-CI, JIRA, Teams, QuickTime, Microsoft Suite, Markdown, Mermaid

Plutometry utilizes machine learning to make financial predictions for their customers within a highly-secured environment. I served as the Lead Developer for most of their applications, working primarily in Python, Java, and C.

* Established Project Management practices throughout the company. (Setup JIRA, trained staff on agile methodologies, served as the scrum master)
* Delivered Plutometry’s first revenue-generating platform. (Defined the scope, gathered requirements, established roadmaps, collaborated across teams, coached engineers, implemented key components, provided operational support, etc.)
* Reduced the end-to-end execution time of Wealthpoint by a factor of 200, thus enabling Plutometry to conclude its pilot program and graduate to a national rollout.
* Promoted SDLC Best Practices. (Test coverage, code reviews, continuous integration, release management, internal libraries, private package registries, documentation)
* Defined the Mathematical Underpinnings for Plutometry’s Machine Learning Models. (Standardized terminology, untangled key concepts, defined mathematical operations)
* Provided key insights that often reshaped the way the research team conceptualized things. (Ex: demonstrated ways to quantify the topological characteristics of the models, which ultimately helped the team understand some counterintuitive observations.)
* Delivered a new “Model Laboratory” platform that empowered the Research Team to train and test models on their own without requiring assistance from the Engineering Team.

In June 2024, I returned to Plutometry on a temporary basis to help them navigate through a critical period and train their new engineers. As such, my work during this brief period was fairly limited in scope.

* Repaired the infrastructure that was critical to product delivery. (AWS, Azure, Vault, Kubernetes Clusters, GitLab, Nexus, SonarQube, and more)
* Guided Customers through operational workflows and ensured that their financial predictions were delivered on schedule.
* Authored onboarding procedures for new team members.
* Trained new team members.

#### Principal Software Engineer 33Across

May 2016 – October 2019

Javascript, Ruby, Bash

Koa.js, Rails, Sinatra, REST, OpenAPI, Angular 1.6, Resque, nginx, MySQL, PostgreSQL, MongoDB, Redis, Hive, Grafana, ActiveRecord, Knex.js, RSpec, Mocha, Chai, Git, Gem, Bundler, rvm, npm, nvm, Docker, VirtualBox, GitLab-CI, Jenkins, JIRA, Slack, Google Suite, Markdown, draw.io, Gliffy, QuickTime, Confluence

33Across maintains infrastructure that delivers online advertisements to web sites. During my tenure, the business sought to create a new platform that delivered advertisements using a modern technique known as “Server-Side Header Bidding”. I was the technical lead for this initiative and many others, which demanded expertise in both JavaScript (Node.js) and Ruby.

* Architected and delivered a globally-available advertisement delivery platform that served millions of requests per minute with a target latency of 5ms per request.
* Promoted SDLC Best Practices. (Test coverage, code reviews, continuous integration, release management, internal libraries, private package registries, documentation)
* Coordinated the delivery of numerous software projects across various teams. (Gathered requirements, defined scope, established roadmaps, collaborated across onshore and offshore teams, coached engineers, implemented key components, etc.)
* Designed and implemented several experimental technologies. (Tooling for syndicating the rollout of advertisement preferences across platforms, specialized pattern matchers, declarative languages for policy and enforcement)

#### Principal Software Engineer + Owner Arclia LLC

July 2014 – Present

Python, Javascript, Typescript, Ruby, Java, C, Bash

React, Next.js, Gatsby, WebPack, Babel, MDX, Tailwind CSS, PostCSS, Django, Rails, Sinatra, REST, Resque, Django, nginx, MySQL, PostgreSQL, MSSQL, MongoDB, Redis, RabbitMQ, SqlAlchemy, Knex.js, ActiveRecord, Mongoose, Pytest, unittest, RSpec, Selenium, Capybara, PGP, Git, Pip, setup.py, VirtualEnv, Gem, Bundler, rvm, npm, nvm, Babel, WebPack, Docker, VirtualBox, Heroku, GitLab-CI, Jenkins, CircleCI, AWS, JIRA, Trello, Slack, Google Suite, Markdown, draw.io, Gliffy, QuickTime, Confluence

I launched Arclia LLC so that I could take on contract work from local startup companies. My contracts with 33Across and Plutometry quickly converted into full-time employment.

* Guided Startup Founders toward clear and actionable Product Visions.
* Developed Prototypes and Minimum-Viable Products that could be shopped around to potential Customers.
* Adopted codebases and improved their code quality. (Tackled performance bottlenecks, refactored code for maintainability, mitigated security issues, automated deployments, renovated user interfaces)
* Established Project Management practices. (Introduced companies to JIRA and other solutions, trained staff members on agile methodologies, served as the scrum master)
* Introduced SDLC Best Practices. (Test coverage, code reviews, continuous integration, release management, internal libraries, documentation)

#### Senior Software Engineer JIBE

June 2013 – June 2015

Ruby, Bash

Selenium, Capybara, Sinatra, REST, Resque, nginx, MongoDB, Redis, RabbitMQ, Grafana, ActiveRecord, Mongoid, MongoMapper, RSpec, Git, Gem, Bundler, rvm, VirtualBox, Capistrano, Jenkins, JIRA, Slack, Google Suite, Markdown, Confluence

JIBE’s signature product was JIBE Apply, which significantly improved the user experience for job applicants while allowing employers to continue using their preferred Applicant Tracking System. Behind the scenes, this entailed integrations with legacy web sites that were never designed to be automated. I became the Lead Integration Engineer for JIBE Apply shortly after I was hired.

* Re-architected the JIBE Apply backend for long-term maintainability, reliability, and scalability. (Retired Git Submodules in favor of internal libraries, authored numerous utilities and libraries, introduced error monitoring)
* Instilled a culture of code reuse. (Encouraged integration engineers to create small libraries that solved specific problems. Worked with IT to provision a private package registry.)
* Standardized core infrastructure across customer integrations.
* Provided architectural oversight.
* Improved the efficiency of the integration engineering team by over 1000%.
  + Authored numerous libraries that encapsulated techniques for reliable UI automation.
  + Wrote a compiler that emitted all valid workflows for each client. This enabled the engineers to write a single high-level specification for each client rather than maintaining hundreds of individual workflows by hand.
* Coached junior team members.
* Established code review practices.

#### Senior Software Engineer Cigital, Inc.

June 2008 – June 2013

Python, Ruby, Java, C#, Bash

Selenium, QPT, LoadRunner, Fortify SCA, Rails, REST, SOAP, nginx, Apache httpd, Apache Tomcat, MySQL, LINQ, Hibernate, ActiveRecord, RSpec, JUnit, PGP, Git, Subversion, StarTeam, Pip, setup.py, VirtualEnv, Gem, Bundler, rvm, Maven, Ant, Paver, VirtualBox, VMWare Player, Fabric, Jenkins, Hudson, Cruise Control, Redmine

Cigital was primarily a software security consultancy, although it also dabbled in quality assurance and software development. I was one of the only employees who wore all these hats.

* While working with the Product Development team, I:
  + Designed components that integrated static analysis into CI/CD pipelines. (Note: our team was pioneering these integrations before they became commonplace)
  + Revitalized a faltering product through rapid iteration and feature innovation. (This also repaired a customer relationship in the process)
  + Worked with customers to define product roadmaps.
  + Served as the technical project manager for offshore teams.
* While working as a Quality Assurance consultant, I:
  + Managed infrastructure for tracking both automated and manual test cases.
  + Created a mutation-based testing tool for simulating user behaviors. (This uncovered numerous bugs that we had never thought to test for explicitly)
  + Created meta-programming language for QTP. (This enabled the QA team to write resilient automated tests that could accommodate changes in the UI)
  + Trained QA teams on Selenium / QTP / Quality Center / LoadRunner.
  + Established best practices for writing maintainable automated tests. (Separating code and data, creating reusable components, object-oriented programming, aspect-oriented programming, etc.)
* While working as a Security Consultant, I:
  + Conducted security reviews of customer codebases.
  + Delivered security training to customers.
  + Defined best-practices for security-oriented QA.
  + Trained Cigital’s employees on Rails security.

#### Software Intern Cigital, Inc.

June 2007 – August 2007

Java, Apache Ant, Eclipse

* Served as the lead developer for a reverse-engineering tool.

#### Software Intern Air Force Institute of Technology

June 2006 – August 2006

C++, Make

* Implemented a stochastic analysis program that computed probabilities for various types of failures within complex networks.
* Discovered a flaw in one of AFIT's algorithms. This flaw could cause the algorithm to produce probabilities that were outside of the range [0, 1].

#### Software Intern Air Force Institute of Technology

June 2005 – August 2005

C++, Fortran, Make

* Translated a stochastic analysis program from Fortran to C++.
* Extended the program to allow for arbitrary probability curves and precision.

### Education

* Bachelors of Science in Mathematics (Case Western Reserve University, 2008)

### Professional Skills Summary

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| Leadership | Project Management, Requirements Gathering, Road-mapping, Documentation, Code Reviews, Process Improvement, Software Architecture |
| Code Paradigms | Object-Oriented Programming, Functional Programming, Metaprogramming, Domain-Specific Language Design |
| Languages | Python, Javascript, Typescript, Ruby, Java, C#, C++, C, Bash |
| Frontend Tooling | React, Next.js, Gatsby, WebPack, Babel, MDX, Tailwind CSS, PostCSS |
| Web Service Tooling | Koa.js, Express.js, Flask, Django, Rails, Sinatra, REST, SOAP, Celery, Resque, OpenAPI |
| HTTP Servers | Nginx, Apache httpd, Apache Tomcat |
| Databases | MySQL, PostgreSQL, MSSQL, MongoDB, Redis, Hive, RabbitMQ, Grafana |
| DB Query Builders | SqlAlchemy, Knex.js, LINQ, Hibernate |
| ORMs | SqlAlchemy, ActiveRecord, Mongoid, MongoMapper, Mongoose, Bookshelf.js, Sequelize, Django (models), LINQ, Hibernate |
| Data Science | NumPy, Pandas, scikit-learn, ray, Jupyter, MLFlow |
| Automated Testing | Pytest, unittest (Python), RSpec, JUnit, MochaJS, Chai, Selenium, Capybara, QTP, LoadRunner |
| Static Analysis | SonarQube, Fortify SCA |
| Security | Hardware Security Modules, PGP, Cryptography, HashiCorp Vault |
| Version Control | Git, Subversion, CVS, StarTeam |
| Dependency Mgmt. | Pip, Poetry, VirtualEnv, Gem, Bundler, rvm, npm, yarn, nvm, Maven |
| Build Tools | Babel, WebPack, Rake, Ant, Maven, Make, Paver, setup.py, Poetry, Packer |
| Containerization | Docker, Podman |
| Virtualization | Parallels, VirtualBox, VMWare Player, Packer |
| Deployment | Terraform, Kubernetes, Capistrano, Fabric, Heroku |
| CI/CD | GitLab-CI, Jenkins, Hudson, Cruise Control |
| Cloud Platforms | AWS, Azure |
| Issue Tracking | JIRA, Redmine, Trello, Asana |
| Collaboration | Slack, Discord, Teams, Google Suite, Microsoft Suite, Markdown, draw.io, Gliffy, Whimsical, Mermaid, QuickTime, Confluence |

### FAQ

#### Are you willing to relocate out of Washington, DC?

Not right now. I have a great community of friends here, and I’d rather not leave!

#### Are you open to working Remotely?

Yes! I’ve been working remotely for nearly a decade, and I’ve gotten quite good at it.

In fact, I even trained Plutometry’s staff on remote work during the early days of the pandemic. After a few months, they realized that remote work had increased their productivity, and they ultimately decided to discontinue their physical office.

#### Have you contributed to Open-Source?

Yes! Most of the libraries that I’ve written are proprietary, but I managed to open-source some of the smaller libraries over the years.

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| **Title** | **Language** | **Purpose** |
| arclia-stats | Python | Implements weighted quantiles. (Functionality that is surprisingly absent from numpy!)  <https://github.com/Arclia/python-arclia-stats> |
| zxc | Javascript | Provides easy command-line access to project-specific executables within Node.js projects. This was a lot more useful before npx was invented!  <https://github.com/briandamaged/zxc> |
| Logbert | Ruby | A categorical logger for Ruby. This became the de-facto logger at JIBE because none of the other loggers fit their needs at the time.  <https://github.com/briandamaged/logbert> |
| Tolerable | VBScript | Leverages runtime code generation to add anonymous functions, inheritance, and meta-programming to the VBScript language.  <https://github.com/briandamaged/tolerable> |
| Unobservable | Ruby | Extends Ruby’s object model to support .NET-style events.  <https://github.com/briandamaged/unobservable> |
| B-Lazy | Ruby | Extends Ruby’s Enumerable mixin to support lazy evaluation. Ruby 2.0 incorporated something similar into its core API, thus eliminating the need for this library.  <https://github.com/briandamaged/b-lazy> |

Additionally, I’ve submitted fixes to various larger projects over the years. Most notably, I mitigated several race conditions throughout the [Knex.js](https://github.com/knex/knex) codebase.

#### Do you have any interesting hobbies?

You be the judge!

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| * Bicycling * Hiking * Kayaking | * Cooking * Baking * Beer Brewing | * Karaoke * Piano * Songwriting | * Board Gaming * Video Gaming * Programming |