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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

#### Plutometry Corporation (October 2019 – Present)

Python, Java, C, Bash, Flask, REST, OpenAPI, Celery, MySQL, MSSQL, SqlAlchemy, Numpy, Pandas, scikit-learn, ray, Jupyter, MLFlow, Pytest, unittest, JUnit, SonarQube, Hardware Security Modules, PGP, Cryptography, Hashicorp Vault, Git, Pip, Poetry, setup.py, VirtualEnv, Maven, Docker, Podman, Packer, Terraform, Kubernetes, GitLab-CI, AWS, Azure, 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.

##### Principal Software Engineer *(October 2019 – January 2024)*

I was initially recruited to implement a proprietary Blinding Token technology on a Hardware Security Module. Afterwards, I served as the company’s Lead Developer.

* 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.
* Established Project Management practices. (Setup JIRA, trained staff on agile methodologies, served as the scrum master)
* 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.

##### Principal Software Engineer *(June 2024 – Present)*

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.

#### 33Across (May 2016 – October 2019)

Javascript, Ruby, Bash, Angular 1.6, Koa.js, Rails, Sinatra, REST, OpenQPI, 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.

##### Principal Software Engineer *(May 2016 – October 2019)*

I was initially recruited to help 33Across modernize the UI for their Unified Dashboard. Soon afterwards, I was promoted to Principal Software Engineer and served as an advisor across numerous projects.

* Architected 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. (Gathered requirements, defined scope, established roadmaps, collaborated across 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)

#### 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.

##### Owner + Principal Software Engineer *(July 2014 – Present)*

* Guided Startup Founders toward clear 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)

#### JIBE (June 2013 – June 2015)

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

JIBE significantly improved the user experience for job applicants without forcing companies to switch to a new Applicant Tracking System. Behind the scenes, this meant that the integration engineers had to invent clever ways to automate legacy software that was never designed to be automated.

##### Senior Automation Engineer (June 2013 – June 2015)

I primarily focused on re-architecting the JIBE Apply backend for long-term maintainability, reliability, and scalability.

* 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.

#### Cigital Inc. (June 2007 – June 2013)

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

I performed numerous different roles at Cigital, most of which were either directly or indirectly related to the security industry.

##### Senior Software Engineer (January 2012 – June 2013)

* Worked with customers to define product roadmaps.
* Served as the technical project manager for offshore teams.
* Revitalized a faltering product through rapid iteration and feature innovation. (This also repaired a customer relationship in the process!)
* Designed components that integrated static analysis into CI/CD pipelines. (Note: our team was pioneering these integrations before they became commonplace)

##### Quality Assurance Lead (January 2011 – December 2011)

* Established infrastructure for managing and tracking manual test cases.
* Provided technical support for customers.
* Coordinated onshore and offshore teams.

##### Security Consultant (January 2010 – December 2010)

* Conducted security reviews of customer codebases.
* Delivered security training to customers.
* Defined best-practices for security-oriented QA.
* Trained consultants on security-awareness in Rails.

##### Quality Assurance Automation Engineer (June 2008 – December 2009)

* Designed mutation-based testing tool for simulating user behaviors. (This uncovered numerous bugs that we had never thought to test for explicitly)
* Designed 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 QTP / Quality Center / LoadRunner.
* Established Manual → Automated Test Case promotion workflow.
* Constructed distributed cluster of QTP machines.
* Deployed and managed QA infrastructure.

##### Software Intern (June 2007 – August 2007)

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

#### Air Force Institute of Technology (AFIT) (June 2005 – August 2006)

C++, Fortran, Make

I worked as an intern at the Air Force Institute of Technology for 2 summers. During this time, I wrote software to help them conduct stochastic analysis.

##### Software Intern (June 2006 – August 2006)

* 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 (June 2005 – August 2005)

* 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

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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 |

### Side Projects

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> |

### Hobbies

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