

Joseph McCullough - Developer+Devops

Contact

Joe McCullough

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Current location: Austin, TX

Github profile: [JoeQuery](https://github.com/JoeQuery)

Employment

[IST Research](#) - Technical Operations / Quality Engineering (January 2016 - Present)

- Docker
 - Took existing applications and created docker images via Dockerfiles
 - Optimized existing dockerized application build times
 - Multistage builds
 - Alpine builds when practical
 - Created docker-compose files to enable developers to quickly provision environments
- Monitoring
 - Used [DataDog](#) as the primary monitoring platform
 - Created system-level monitors for services such as Redis, Kafka, and Elasticsearch
 - Created dashboards and monitors for in-house applications to track application health and report anomalies
 - Integrated monitors with [PagerDuty](#) for on-call paging
 - Created custom DataDog checks in Python for polling Elasticsearch documents over specified intervals
- AWS Management
 - Standard alphabet soup stuff: EC2, ELB, RDS, Route53, Elasticache, IAM
 - Participated in the Amazon Neptune preview. Created IAM policies to allow Lambda to communicate with Neptune, S3, and API Gateway.
 - Created VPC peering connections to allow for [Portainer](#) nodes to communicate across AWS organizations

Continuous Integration

- Evaluated various CI tools to establish the future of CI at IST. Decided on [CircleCI](#) for its docker support
- Created CI pipelines that run unit tests, build and push docker images, and automatically deploy to the dev environment

Deployment automation

- Ansible was used for automated provisioning of infrastructure
- Noteworthy Ansible roles authored include:
 - A custom [nginx ActionModule](#) that enables roles to deploy nginx configs
 - A [Tarsnap role](#) for automatic backups
 - A non-standard [Oozie installation](#) that links to a local hbase installation
- Troubleshooting Documentation
 - Authored troubleshooting documents called "playbooks" that accompanied PagerDuty pages so the on-call engineer could diagnose and resolve issues they may not be familiar with
 - Bridged the knowledge gap between developers and technical operations by creating diagrams that described the network communication specific to an application
- Server management
 - Ubuntu 14.04
- Maintenance and upgrades
 - Performed scheduled downtimes according to customer schedule requirements
 - Created logs of deployment anomalies for stability follow-up procedures
- Python development
 - Improved twitter streaming application by implementing an asynchronous KafkaProducer
 - Implemented a Slackbot that generates a forecast-style gif of DataDog dashboards and places them into Slack channels

[Austin Coding Academy](#) - Instructor (June 2014 - November 2015)

- Corporate training
 - Introduction to Ruby for AMD engineers
- Tutoring and mentoring for students learning Python/PHP/JavaScript
- Developer community outreach

- [Git crash course lecture](#)
- [Thinking recursively](#) talk at Women Who Code meetup
- Answering programming questions on Reddit [/u/AustinCodingAcademy](#)
- Content creation
 - [What is JSON?](#)

[Andrew Harper](#) - Python Developer (Contracting May 2015 - September 2015)

- Integrated a BackboneJS front end with a Django Rest Framework API
- Doubled the speed of a pre-existing in-house search indexer through Django ORM optimizations
- Created user favorites for arbitrary objects via Generic Foreign Keys
- Implemented a flexible data submission/review cycle between Andrew Harper employees and hotel representatives

[Andrew Harper](#) - Python Developer (June 2013 - June 2014)

- Rest API development via Django Rest Framework
 - Overrode Django Rest Framework internals to allow for more dynamic routing
 - Created authorization scheme which enforced limitations on API clients (with an emphasis on securing user data)
- Custom shopping cart
 - Stripe integration
 - Authorization to various parts of the site based on product selection
 - Created infrastructure for promo-codes, bundled products, US vs International pricing
- Dynamic GeoJSON generation for use with the MapBox API
 - [View the map](#)
- Created custom python APIs to cope with vendors unable to expose json/xml endpoints
 - [Requests](#) was used to facilitate interaction with the vendors' web applications
 - [PyQuery](#) was used to parse the resulting HTML and extract relevant data.

[Communications Corporation of America](#) - PHP Developer (Dec 2011 - June 2013)

- Custom Drupal module development for 25+ TV station websites.
- Created custom PHP libraries for interacting with vendor web applications
- Created in-house utilities to aid collaboration workflow. These tools enabled us to
 - easily transfer databases between developer machines
 - quickly restore from on-site database backups
- AWS management
 - EC2 / ELB
 - RDS
 - S3 / Cloudfront
- Nginx/Apache webserver management and configuration

[Vert Studios](#) - Web Developer (Sep 2010 - 2012)

- Custom jQuery plugin development
- Simple website development via Wordpress, RefineryCMS
- Deployment, hosting, and version control management
- Traffic generation via technical articles

Personal Projects

Continuous Integration

[Stupid-table-plugin](#) via [CircleCI](#)

- QUnit driver + Selenium for unit test verification
- [View CircleCI config.yml](#)

Python

- [JSONSelector](#) - A utility which describes how to traverse to a particular value in a JSON response
- [MiddleMan](#) - Dynamic HTML templating system that directly interacts with JSON APIs responses. ([View on github](#))
- [Python built-in function reference](#) - Explanations and examples of built in Python functions
- [ioequery.me](#) - My personal website, a custom Flask blog engine.

JavaScript/jQuery

- [Stupid Table Plugin](#) - A stupidly simple jQuery table sorting plugin
- [Challenge Text Alerts](#) - A Chrome extension which modifies the UI of the tournament bracket web application [Challenge](#) to support sending text messages to competitors. ([View demo](#)).

Ubuntu server configuration

- Installation of JIRA Server, Confluence, Apache Guacamole
- [Rails Template](#) - Rails template with extensive nginx documentation
- [Guide to installing Arduino on Ubuntu Virtualbox Guest under Windows Host](#)

Ruby

- [mrbc playground](#) - An environment to quickly convert ruby to object code.
- [Stagger](#) - Backup multiple MySQL databases at staggered times to ease server load
- [Route53-To-S3](#) - Backup Route53 DNS Records from AWS to S3

Technical writing / Tutorial creation

- [Beginner's Introduction to Pointers in C](#)
- [Introduction to Recursion](#)
- [Converting a simple website to Python Flask](#)

Open source contributions

- Refactored and extended the parser of a Jinja2 syntax highlighting plugin - [PR Link](#)
- Added installation documentation for Habitbot setup - [PR Link](#)
- Altered the client Terminal broadcasting service ScreenxTV to hide user credentials input through the terminal - [PR Link](#)
- Fixed an issue in mruby's mirb REPL where the strings "exit" and "quit" would terminate the REPL when intended to be used as strings - [PR Link](#)

Education

University of Texas at Tyler
Major: Computer Science with Math minor (Did not graduate)
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Attended: 2010-2013

Associates in General Studies

Tyler Junior College
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References

Available upon request.