# Adam Ferguson

## Software Developer

**Address:** Charlotte, NC
**Phone:** 540.558.8670
**Email:** Adam.Brugh.Ferguson@gmail.com
**Website:** http://www.adam-ferguson.com

AdamBFerg @ twitter
AdamFerguson @ github
adambferg @ linkedin

## About

Software developer with broad experience in full stack web development, cloud computing, devops, data analysis, service oriented architecture, and systems integration. Strong problem solver that optimizes for reliable, working solutions that are cost effective in both the short and long term. Strives to always maintain a balance between perfectionism and pragmatism. Easy going personality and appreciates that the creation of software is a team sport. Constantly learning and quickly adapts to new technologies, techniques, and architectures.

## Skills

### Programming

- Ruby, +6 years
- Python, +4 years
- Javascript, +10 years
- CSS/HTML/HTML5, +15 years
- Java, +15 years
- Bash, intermediate, +5 years,
- C#, intermediate, +10 years,
- Clojure, novice, +1 year
- Scala, novice, +1 year
- Perl, not used anymore

### Technology

- Git, Mercurial, SVN, CVS
- PostgreSQL, MySQL, SQL Server, Oracle
- Redshift
- ElasticSearch
- Redis
- MongoDB
- Docker
- Ansible, Chef, Capistrano, Fabric
- Hadoop ecosystem, novice
- Travis, Jenkins
- Vagrant

## Frameworks/Libraries

- Client-Side Javascript - EmberJS (advanced), AngularJS, ReactJS, BackboneJS
- Server-Side Web - Ruby on Rails (advanced), Django, Spring MVC, Play
- Microframeworks - Flask, Sinatra, ExpressJS, Bottle
- ORM/Database - Mongoose/ Mongoid, SQLAlchemy, Hibernate, Entity Framework
- Testing libraries - RSpec, QUnit, Mocha, Jasmine, Nose

---

# Work Experience

# Ferguson Software Services onsite at Mood Media

**Data Engineer and Application Development Consultant**

Systems integration and web application development

- Assisted development team in the creation of the "Encore" project, a web application used internally at Mood Media for the management of music content. Encore consolidates the functionality of multiple internal systems. Backend is C# using Web API and Entity Framework, exposing a JSON-RPC API, and AngularJS on the frontend.
- Wrote an ETL framework in Python and SQLAlchemy responsible for migrating data into Encore from legacy applications as well as pushing data entered into Encore to existing legacy applications.
- Assist in the maintenance of "Mood Mix", a Ruby on Rails application that lets Mood Media customers create, manage, and play custom playlists. Included migrating reporting infrastructure in Mood Mix to Redshift.
- Developed a Ruby on Rails application that reports on Device outages seen in the field.

---

# Ally Financial through OpenSystems Technologies

**Web Development Consultant**

- Joined an existing development team to help in the completion, and deployment, of an effort to rewrite Ally's online banking frontend as an EmberJS application.
- Completed the build process needed to minify, and fingerprint, javascript and css files prior to deployment in production. Build process used RequireJS and Rake Pipline.

- Helped port build process of application to Ember CLI. Included rewriting javascript code to use ES6 modules instead of RequireJS style modules.
- Wrote a custom dev server in NodeJS that acted as an API proxy. Allowed team to get around web browser security restrictions that were preventing testing on mobile devices.
- Heavily customized Ember CLI build process to allow for separate application builds for Desktop web browser and Mobile web browsers. This process allowed for the creation of a mobile version of the existing desktop application that was a small subset of the desktop and reused most of the existing code with selective overrides.

# Technekes/Connexiolabs

**Senior Software Engineer**

- Work with a small team of developers to create back office tools for running marketing campaigns including: a Marketing Data API, a Workflow application, and a Call Center application.
- Developed the Call Center application used by all of Technekes' call center employees with one other developer and a designer. The frontend makes cross domain API calls to multiple backend services. The Call Center specific backend provides a backend JSON API and utilizes PostgresSQL, MongoDB, and ElasticSearch. The Twilio API is used for Telephony via both VOIP (via the browser) and phone-to-phone calls. Twitter Bootstrap is used as a basis for design, though the UI is quite customized beyond Bootstrap's default appearance.
- Developed a Realtime Dashboard using Ember.js and Ruby on Rails to allow Call Center administrators to monitor the status of Call Center employees and listen in on ongoing calls. The dashboard uses Pubnub to push status updates from the server to the browser and Sidekiq for queuing status updates.
- Developed an admin interface for reporting aggregate information related to the Call Center.
- Contributed to the Puppet repository used for managing all servers in QA and Production environments.
- Part of a three developer team that was split off from Technekes to form a new, product-focused, startup: Connexiolabs.
- Developed an Eloqua Cloud Connector application in Ruby on Rails that allows users to configure steps during their Eloqua marketing campaigns for sending text messages via the Twilio API. Used the Savon gem for communicating with Eloqua's SOAP based API.
- Develop two separate versions of an Ember.js and Ruby on Rails application that allows users to upload a CSV file that contains marketing data, map it into a form that can be sent to the Connexio API and then parse the file and upload the data to the API.

# Mood Media/Muzak LLC

**Senior Software Developer**

- Worked as part of a small team of developers (started with two and eventually transitioned to six) to design and develop multiple web and mobile applications including OnlineDJ, Klikt, Sonictap, and the Mymuzak dashboard.
- Designed and developed the MyMuzak dashboard, Klikt, and OnlineDJ web applications along with their RESTful (JSON based) APIs in version 3.2 Ruby on Rails apps using BDD and TDD techniques. Used Cucumber for feature development and integration testing and RSpec for integration and unit testing. Front end code written in a mixture of Haml, Scss, Coffeescript, Javascript, HTML, CSS, and ERB.
- Helped set up and deploy all applications using multitiered architecture on Amazon Web Services (AWS). Used MySQL as the database server on RDS, with multiple application servers running nginx as the web server, Unicorn as the application server, in addition to a separate server used for running background jobs using resque and redis.
- Used Sphinx and Thinking Sphinx gem for full text search in Mymuzak. Used Solr and Sunspot gem for search in OnlineDJ.
- Developed server code in javascript for Sonictap application using Node.js, Express.js, Passport, and Mongoose. Application parsed UDP packets with playlist updates and served a RESTful API to authenticated iOS clients.
- Promoted and led the integration of Backbone.js and Underscore.js for rich client side use in OnlineDJ. Built out a full featured calendar for scheduling playlists in Backbone.js, Underscore.js, Haml, and Scss.
- Used Capistrano for deployment and eventually used Chef for automating server setup. Used continuous integration for automated deployments to our staging environments using Jenkins CI.
- Led development on the initial prototype mobile application for Klikt that used Phonegap and was deployed to the Apple App Store. Used modern, structured, javascript techniques to write the application which used jQuery, jQuery Mobile, Backbone.js, and ICanHaz.js for client side templating and communicated with our RESTful API.
- Led development on a native Android version of Klikt that had several advanced features, including push notifications (for new deals and loyalty programs), Google Maps integration, and QR code scanning. Used Spring Android and Jackson java libraries for communicating with the RESTful API. Designed a mechanism for communicating with the API in a background service and persisting the results to the phone.
- Began developing an Android tablet application for OnlineDJ that used Android Annotations, Roboguice, Robolectric, Spring Android, Jackson, and OrmLite. Project was shelved prior to completion because of other higher priorities.
- Wrote code for communicating with several third party API's including Facebook, Twitter, Mailchimp, AppFigures, and Google Maps, along with a few others, in both Ruby and Java.
- The development process for all projects was Agile with requirements built around wireframes and development cycles completed in two weeks sprints.

# Wells Fargo through TekSystems

**Web Developer**

- Wrote backend and frontend code for international trade department using Java, FLEX, and in-house proprietary development framework.
- Project was using Hibernate for persistence layer, HP Quality Center for issue tracking, Eclipse as IDE, Ant for builds, JBoss as application server, and Oracle as the database server.

# Public Consulting Group

**Software Engineer**

- Primary developer on BehaviorPlus, a web app for tracking behavioral issues in grade school students that integrated with an existing legacy system that tracked data on special education students.
- Followed an iterative software development process where word documents describing the data entry screens and flow between screens were used to design the database schema, middle tier components used to interact with the database, and front end code for displaying data to the user.
- Backend code was written using SQL and Perl, front end code was written using an in-house templating system similar in nature to JSP or Erb, along with HTML, CSS, and Javascript (including the Prototype and jQuery javascript libraries). SQL Server 2000 and IIS were initially used as DB and application servers. Later migrated to SQL Server 2005 and Apache.
- Assisted in creating stylesheets that defined interface standards for all commonly displayed elements in pages within the web app.
- Led the configuration, training, and release of the issue tracking tool JIRA within the company.
- Communicated technical system requirements to Business Systems Analysts and Project Managers for features and system changes during the design phase of projects.
- Developed scripts used for common system administration tasks using Perl.

# SNL Financial

**Business Systems Analyst**

- Maintained and acted as content expert for Institutional Ownership, Insider Trading and Short Interest datasets within the company. Training on these datasets happened in less than a one month period.
- Communicated with third-party vendors for content and technical specifications related to datafeeds.
- Drafted technical specifications for converting manual collection and entry of credit ratings from three major credit rating agencies (S&P, Moody's, and Fitch) to automated process including specifications for software used for feed maintenance.

- Derive dataset statistics for senior management and sales teams for use in contract negotiations and marketing materials using SQL and proprietary Excel plug-in, SNLxl.
- Troubleshot problems reported in SQL Server 2005 stored procedures used for calculating SNL's internal market indices.

# National Science Foundation

**IGERT Fellow**

- Led and assisted in various research projects interested in examining economic aspects of the emerging wireless technology cognitive radio.
- Conducted regression analysis on data collected in Economics Experiments in STATA. Results included in journal publications.

# Economics Dept. at Virginia Tech

**Programmer/Lab Assistant**

- Development, analysis, and refinement of the Wireless Interactive Teaching System (WITS) including programming in C#, developing server-side logic, and data collection and analysis.
- Web design for the WITS project using FrontPage and text editors.

# Virginia Tech Transportation Institute

**Research Assistant**

- Extract and analyze relevant data from Human Factors studies using Excel, VB.NET, and SQL Server.

# Education

# Virginia Tech, Blacksburg, VA

2004 - 2006

MA Economics
Nation Science Foundation IGERT Fellow

# Virginia Tech, Blacksburg, VA

2000 - 2004

BS Economics & Business Information Technology,
Outstanding Senior in Economics Class of 2004
3.7 GPA

# Interests

- Cloud Services
- Emerging technologies
- Data Analysis and Machine Learning
- Design Patterns
- Service Oriented Architecture

---

Source on github