

Joe Sanford

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Education

- 2012–2015 **M.Sc., Computer Science**, *Tufts University*, Medford, MA.
2003–2005; 2010–2012 **B.Sc., Information Sciences and Technology**, *Pennsylvania State University*, University Park, PA.

Professional Experience Highlights

- 05.16–Present **Software Developer**, *Raizlabs*, Boston, MA.
- Wrote custom backend APIs with full test suites and documentation for client applications in Django Rest Framework and Express
 - Worked through a handoff and migrated existing client codebases to new Amazon Web Services-based hosting, continuous integration, and version control
 - Handled daily interactions with clients, assessing and prioritizing their needs to help guide product evolution and developer priorities
 - Set up web applications to deploy to Amazon Web Services ElasticBeanstalk after completing testing on CircleCI using AWS ElasticBeanstalk CLI
 - Deployed new applications not fit for EB to Amazon EC2, RDS, and EBS
 - Learned new technologies and platforms through company sponsored hack days
 - Helped guide junior developers, gave company-wide talks and wrote blog posts to help knowledge sharing
- 06.15–05.16 **Software Engineer**, *Dun & Bradstreet NetProspex*, Waltham, MA.
- Wrote business logic processes in Python manipulating large datasets, utilizing Celery for queuing and distributing tasks
 - Improved both time and space performance of libraries used across company products that are integrated with multiple APIs, heavily leverage caching strategies
 - Integrated business-wide tools and workflows into marketing automation systems to offer customers means of integrating our products
 - Worked in agile development teams, pivoting in multiple initiatives that spanned both back end business logic and front end processes and integrations
 - Rewrote back-end framework into an extensible, modular architecture designed for scaling, utilizing Flask and Celery
 - Coordinated and planned deployments of software across 12+ distributed nodes
 - Began push to make testing coverage of applications to be more complete, writing most of new tests
- 08.12–07.15 **Graduate Research and Teaching Assistant**, *Tufts University*, Medford, MA.
- Assisted students, graded papers, and helped teach 5 courses: Databases (Graduate level), Electronic Musical Instrument Design, Computational Models in Cognitive Science (Graduate level), Unix Systems Administration (Graduate level), and Introduction to Computer Science
 - Created back-end infrastructure, custom scripts, and interfaces for automated grading
 - Aided students in creating electronic musical instruments, including circuit design, signal processing, and MIDI.
 - Lead developer of BlockyTalky, a tangible tool for learning Computer Science (more at <http://ipc.cs.tufts.edu/blockytalky/>)
 - Led teams composed of undergraduate and graduate students to further develop BlockyTalky, including usability studies

- 06.09-present **Webmaster/Developer**, *Society of the First Infantry Division*, Ambler, PA.
- Created a new web site for the Society, originally migrating to PHP from ColdFusion, now in the process of porting to Django for increased ease of use
 - Added WordPress to allow other members of the Society to edit copy and content, which was only previously done by the web developer
 - Redesigned member management area to be more user friendly and easier to use, as well as more accessible to those unfamiliar with computers or with poor vision
 - Managed a database of over 11000 active members with regularly occurring events
 - Managed deployments of new additions to the database through custom bash scripting
- 09.10-06.12 **Research Assistant**, *Applied Cognitive Sciences Lab*, University Park, PA.
- Led a study examining the acquisition of cognitive motor skills with respect to varying training regimens
 - Aided in the development of an intelligent tutoring system, including contributing to the development of tutor methodology capable of transitioning learners from declarative to procedural knowledge
 - Assisted graduate students with their research, including developing and maintaining Java and C applications
 - Lead the design of an environment, forked from a custom MUD project, to allow for cognitive modeling agents to travel in and interact with one another. This work was the foundation of a lab-wide publication
 - Edited and revised academic publications, tutorials, and FAQs
- 01.10-07.10 **Application Developer**, *Majestic Consulting Group*, Marlton, NJ.
- Created new installations of MS Dynamics CRM, SalesLogix CRM, and MS SQL Server, including installing Reporting and Integration Services
 - Installed, created, set up, and maintained new servers to host client CRM solutions
 - Created dynamic SSRS reports that work in conjunction with Microsoft Dynamics CRM, as well as customizing reports and their interfaces based on customer guidelines
 - Developed customizations for Microsoft CRM utilizing custom Javascript and C# scripts and applications
- 08.08-12.09 **Consultant**, *Neapco, Inc.*, Pottstown, PA.
- Created an entire database in Oracle based off a set of linked spreadsheets, migrating users to a hosted solution
 - Wrote a PHP back-end with Javascript and jQuery interface for users to load and manipulate data, view reports, and access data modeling results
 - Worked with client to help improve cost analysis and prediction modeling, utilizing machine learning and statistical modeling practices
 - Worked through the development lifecycle with users, testing applications and providing feedback for the introduction of improvements and the management of bugs
- 04.07-08.08 **Intern** → **Application Developer**, *PJM Interconnection*, Norristown, PA.
- Handled daily customer issues in the Database and System Administrator on Duty role for Oracle and Microsoft SQL Server Databases. This included responding to account creations and deletions, access issues, backup management, and security issues and patches
 - Fully automated monthly data restores and validations using SSIS/SSRS, as well as database backup validations
 - Acted as Production Release Coordinator, managing software development, integration, team coordination and release processes for multiple development initiatives
 - Acted as system administrator, including writing bash scripts, automating jobs, managing storage, access, and patching of systems

Computer Skills

- Languages Python, JavaScript/Node, SQL, Ruby, Bash, C++, C, Objective-C, PHP, Max/MSP, PureData
- Technologies Linux (CentOS, RHEL, AMI Linux, Debian), macOS, and Windows systems, Atom, JetBrains IDEs, Eclipse, Git, Subversion, Jira, Celery, RabbitMQ, Vagrant, Docker, Dokku, AWS ElasticBeanstalk, EC2, EBS, CloudFront, VPC, Route 53, SNS, SES, RDS, DBMS (Postgres, MySQL, MongoDB, MS SQL Server, Oracle, SQLite) Web Frameworks and Servers (Django, Flask, Tornado, Express, Ruby on Rails; Apache, nginx, lighttpd), Redis, Memcached, Continuous Integration (CircleCI and TravisCI)
- Interests Contributing to open source projects (Celery, Fish Shell), developed a home automation system using Raspberry Pis and Android for electronics, lights, door, camera, and HVAC controls. Playing guitar, bass, and banjo. Building/designing effects pedals.
- References & Publications Available upon request, publications on personal site (listed above)