Joe Sanford

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Education

2012–2015 **M.Sc., Computer Science**, *Tufts University*, Medford, MA.

2003-2005; **B.Sc., Information Sciences and Technology**, *Pennsylvania State University*, University Park, PA.
2010-2012

Professional Experience Highlights

01.17-present **Senior Software Engineer and Compliance Lead**, *Confirm.io*, Boston, MA.
- Authored and implemented over all policies to help the company prepare for compliance audits and to formalize all engineering processes
- Handled all external documentation of the system and incoming client questions that required engineering assistance, acting as the primary contact for all compliance and security questions
- Managed all security and compliance issues, documentation, and implementations in the system to meet and exceed requirements from customers while working with DevOps to ensure all standards were met
- Worked on the Platform team to maintain, improve, and evolve a distributed, cloud-based, high-availability system for authenticating IDs, including optimizing the system processing speed and reducing the average response time to 1/4 of the original
- Restructured back-end, splitting services into smaller microservices, allowing for more accurate autoscaling, faster processing times, and reduced AWS hosting costs
- Created and updated Ansible playbooks and Jenkins jobs to help automate deployment processes in the stack as well as adding monitoring for performance and security issues
- Created new React-Redux internal tools to allow for visualization of system performance
- Debugged and hotfixed production problems and outages, utilizing AWS to help gain insight on ECS, RDS, EFS, and EC2 issues

05.16-01.17 **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 AWS after completing testing on CircleCI using both AWS ElasticBeanstalk CLI and Dokku
- Learned new technologies and platforms through company sponsored hack days
- Helped guide junior developers as well as giving company-wide talks and writing 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 a extensible, modular architecture designed for scaling, utilizing Flask and Celery
- 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 use of MIDI.
- Lead developer of BlockyTalky, a tangible tool for learning Computer Science (more at http://lpc.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 (https://1stid.org), originally migrating to PHP from ColdFusion, now in WordPress to allow other members of the Society to edit copy and content, with SalesForce integration for membership and event management.
- 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 occuring events

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 environent, 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

04.07-12.09	**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 and SSRS, as well as primary 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, Bash, Java, C++, C, PHP, Objective-C, Max/MSP, PureData

Technologies
: Linux, macOS, and Windows systems, JetBrains IDEs, Git, Jira, New Relic, ThreatStack, Celery, RabbitMQ, Jenkins, Ansible, Vagrant, Docker, Dokku, Front End Frameworks (React/Redux, Angular), AWS ElasticBeanstalk, RDS, EC2, ECS, Lambda, DBMS (Postgres, MySQL, MongoDB, MS SQL Server, Oracle, SQLite) Web Frameworks and Servers (Django, Flask, Express, Restify; Apache, nginx, lighttpd), Redis, Memcache

Interests
: Contributing to open source projects and communities (Celery, Fish Shell, Python Developers Community), writing Alexa skills, 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