

Joe Sanford

5 Whalen Lane
Natick, MA 01760
+1 (215) 429 7996
✉ josephsanford@gmail.com
🌐 www.jpsanford.com

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

01.17–03.18 **Senior Software Engineer & Compliance Lead**, *Confirm.io (Acquired by Facebook 01.18)*, Boston, MA.

- Worked on the platform team to maintain, improve, and evolve a distributed, cloud, Docker, and microservice based system for authenticating IDs, including optimizing the system processing speed and reducing the average response time from 45 to under 10 seconds
- Restructured back-end, splitting services into smaller microservices, allowing for more accurate autoscaling, faster processing times, reduced AWS hosting costs, and fully containerized to make local development faster and easier to set up
- Authored and implemented all internal policies to help the company prepare for compliance audits, as well as formalize all engineering processes
- 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 or exceeded
- Handled all external documentation of the system and incoming client questions that required engineering assistance
- 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-based internal tools to help manage, modify, and visualize how customers were using our system and to help create metrics for autoscaling policies
- 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 & Teaching Assistant**, *Tufts University*, Medford, MA.
- o 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
 - o Created back-end infrastructure, custom scripts, and interfaces for automated grading
 - o Aided students in creating electronic musical instruments, including circuit design, signal processing, and use of MIDI.
 - o Lead developer of BlockyTalky, a tangible tool for learning Computer Science (more at <http://lpc.cs.tufts.edu/blockytalky/>)
 - o 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.
- o 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
 - o Added WordPress to allow other members of the Society to edit copy and content, which was only previously done by the web developer
 - o 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
 - o Managed a database of over 11000 active members with regularly occurring events
- 09.10-06.12 **Research Assistant**, *Applied Cognitive Sciences Lab*, University Park, PA.
- o Led a study examining the acquisition of cognitive motor skills with respect to varying training regimens
 - o 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
 - o Assisted graduate students with their research, including developing and maintaining Java and C applications
 - o 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
 - o Edited and revised academic publications, tutorials, and FAQs
- 04.07-12.09 **Intern** → **Application Developer**, *PJM Interconnection*, Norristown, PA.
- o 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
 - o Fully automated monthly data restores and validations using SSIS and SSRS, as well as primary database backup validations
 - o Acted as Production Release Coordinator, managing software development, integration, team coordination and release processes for multiple development initiatives
 - o Acted as system administrator, including writing bash scripts, automating jobs, managing storage, access, and patching of systems

Computer Skills

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| 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, SNS, SES, 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 (Celery, Fish Shell, PySlackers 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 |