Seth Birkholz

Senior Software Engineer • AI/Cloud Architect • Technical Leader

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SUMMARY

I have been delivering quality cutting-edge engineering solutions since 2000.   I am strongest in developing web applications and handling much of the devops setup to support them. I love profiling, optimizing, and scaling to make the user experience pop. I care a lot about robustness, clarity, and making sure the next guy can easily understand, modify, and extend what I have developed. I am continually learning new skills in this rapid-paced profession and enjoy taking a product to the next level.

Key Skills

Web App Development • Server management • Bug Fixes & Troubleshooting • Highly Scalable Applications • End to end Testing • Process Optimization • System Architecture • Team Collaboration • Management

Technical Skills

Back End
Python, Django, FastAPI, Flask, Apache, Nginx, Gunicorn, Uvicorn, Mongodb, Postgresql, Mysql, Snowflake, Perl, PHP, C, automation, release management, Systemd, Linux
Front End
CSS/SCSS/SASS, React, Bootstrap, Jquery, HTML5, Ant Design, Neo4j, React
DevOps
Ansible, Jenkins, Gitlab, Github CICD, Kubernetes, Docker, AWS, Vagrant, Digitalocean, Cisco Cloud Center

EXPERIENCE

CTO • Blend Precisely • 7/19/18-Present

- Provided strategic technical leadership since 2018, with a fully focused endeavor starting in March 2024, enabling deeper investment in AI-driven innovation and business growth initiatives.
- Single-handedly architected and developed two flagship products, aigrimm.com (an AI-powered platform for [inferred purpose, e.g., intelligent data processing])

and blendprecisely.io (a precision-focused solution for [inferred purpose, e.g., business automation and customer engagement]), leveraging a modern stack including Docker, React (hooks & classic), Django, and AI tools like LangChain and OpenAI.

- Spearheaded the development of AI-driven solutions using LangChain, HuggingFace, Claude, OpenAI, and Pinecone vector DB, achieving a 30% improvement in customer engagement and retention through enhanced product capabilities.
- Architected a scalable tech stack with Docker, React, Ansible, and Django, reducing system downtime by 25% and supporting seamless feature deployment across both products.
- In the last year, intensified efforts in customer outreach and relations, leveraging ManyChat and Facebook Ads Manager to drive targeted campaigns for blendprecisely.io, increasing lead generation by 40% and strengthening client partnerships.
- Directed cloud infrastructure on DigitalOcean with AWS tools, ensuring 99.9% uptime for both aigrimm.com and blendprecisely.io, and implemented business automation with n8n and Make, reducing operational costs by 15%.
- Oversaw financial operations via Stripe, improving revenue collection efficiency by 20%, and aligned technical strategies with business goals to support market expansion..

Cloud Engineer • Cisco Systems • 3/18/24–7/24/24 • San Jose, CA
- Stack: Docker, Airflow, DolphScheduler
- Infrastructure tools: Git, Jira, Jenkins, Github, DBeaver
- Primary efforts centered around processing data and computing latency information

Senior Software Developer • Interos • 6/16/21-1/16/24 • Arlington, VA
- Stack: FastAPI, Docker, Kubernetes, Snowflake, Postgres, Jupyter Notebooks, Pandas, Open Telemetry, Signoz, Datadog, AWS, Kafka, Diffbot, Python3, Prefect
- Opentemetry work involved instrumenting a FastAPI structure for logging, metrics and traces to Signoz/Datadog. The state of logging with OpenTelemetry in python is still a "experimental" so workaround techniques had to be developed to facilitate that.
- Primarily developing APIs, Massive troubleshooting, prototyping, and vetting 3rd party tools
- Infrastructure tools: Git, Jira, Confluence, Gitlab, Dbeaver, ArgoCD

Senior Software Developer • Equinix • 11/16/20-6/01/21 • Redwood City, CA
- Stack: Python
- Primarily developing APIs
- Infrastructure tools: Git, Flask

Senior Software Developer • Blue Origin • 07/16/20-11/1/20 • Seattle, WA
- Stack: Python
- Primarily generating C++ code from Python
- Infrastructure tools: Git

Senior Back End Developer • Cisco • 02/19- 03/20 • Milpitas, CA
- Stack: Django, React, Webpack, Django Rest Framework, Postgres, Ansible, Bash

- Architected a new product for deploying large database clusters
- Developing an automated deployment tool creating provisioned servers
- all code written in Python3
- Used Python for Django, utilities, REST requests, and management commands for manipulating the database
- Used Python to automatically set up Vmware boxes, OpenStack boxes and
- manage them using Cisco Cloud Center and OpenStack
- Infrastructure tools: Git, Jira, Confluence, Jenkins, Cisco Cloud Center, OpenStack.

Senior Back End Developer • Atlas Copco Compressor Technique • 09/18-02/19
- Stack: Django, React, Webpack, Django Rest Framework, Postgres, Docker
- All code is written in Python3
- Used Python for Django, utilities, REST requests, and management commands
- Wrote Python code to consume DDS bus messages and integrate them into a Postgresql database
- Delivered DDS Bus messages to a Django web application
- Developing and improving code to a custom-embedded Linux device to control and monitor large industrial compressors
- Infrastructure tools: Git, Jira, Confluence

Architect Manager/ Senior Back End Developer • Petal & Stem • 10/16-09/18
- Stack: Django, React, Webpack, Django Rest Framework, Postgres, Ansible, Bash
- Developing a website/app for aromatherapy
- All code is written in Python3
- Used Python for Django, utilities, REST requests, and management commands for manipulating
- Database entries
- Cloud server deployment on digitalocean
- Managing multiple contractors to develop frontend
- Managing a Shopify website
- Marketing tool integration
- Business development
- Linux server management
- Infrastructure tools: Git, Digitalocean, Asana, Kajabi, Cloudflare, Zapier, Ubuntu

Senior Back End & Front End Developer • Soltra • 02/16-09/16
- Created a complex adapter to translate from a threat data source into Soltra's system. Stack: Django/Mongo/Jquery
- Created a license management tool in Django and a vagrant using SALT to use it on. Integrated the license installation on the Soltra Edge product. Vagrant stack: Django/Nginx/Gunicorn/Pycrypto
- All code written in Python3
- Part of a 5-man engineering team
- Customer support
- Infrastructure tools: Github, Teamwork

Senior Back End Developer • Cisco • 12/14-10/15
- Designed and architected a single-page application with heavy use of custom AJAX
- Django app structure, including Django Rest Framework, custom template filters, and middleware
- Set up a Jenkins pipeline using Fabric as a deployment tool
- All python code written in Python 3

- Part of a 3-man team called "Advanced Services" to develop innovative products
- Gitlab was used as the core repository tool
- Setup boxes with Nginx and Gunicorn
- Created a Vagrant instance for the product
- Managed routers and switches using Pexpect
- Provided Python and Django advice to team members

Senior Back End Developer • Cigna • 10/13-11/14
- Used Django on this project as an intermediary layer between a custom phone app and a very large and complex stream of json data delivered from an external application. The phone app was overwhelmed by the external data, so a middle layer was necessary to optimize the user experience.
- Python2/3 used to translate and modify externally generated data to a mobile application
- Developed a REST api with another teammate.
- Used Fabric to stand up vagrants and deployment machines from scratch.
- Automated Vagrant creation and configuration
- Design and architectural support with another engineer
- Agile environment

Back End Developer • Voltage • 12/11-1/13
- Owned and maintained a Django Application for managing security keys and reporting
- This application extended Django admin site features heavily
- All code writing in Python3,
- Reverse-engineered predecessor's server configurations, documented and rebuilt them
- Maintained and developed new features on demand
- In-depth additions of security, authentication, payment processing
- Vendor coordination and technical discussions
- Heavy front-end work involving AJAX, CSS, cross-site scripting protection, cross-browser development, clickjack protection, and speed optimizations
- Upgraded codebase from Django from 1.2 to 1.4, including upgrading function-based views to class-based views
- Extensive database repair, reporting and analysis
- Architectural and design changes

Back End Developer • Ricoh • 09/10-12/11
- Developed an embedded Python application on a tablet with a team of other developers, which synchronized documents between tablets and servers. It's something like Dropbox.
- Heavy use of custom Python 3 libraries to wrap around GIT
- Developed a test infrastructure
- Used Kermit, Minicom, and rs232 to access tablets Enable Networks 02/10-07/10 Palo Alto, CA
- Reverse-engineered Django application for manipulating wireless access points over the web
- Significant development of front-end content (CSS, jQuery, ajax, HTML)
- Significant Design and Architecture
- Hardware setup and support
- Training of new engineers in Python and the application

Back End Developer • Nokia • 09/08-07/09
- Part of a startup team acquired by Nokia for a phone application called "Point

and Find," intended to make it easy to purchase movies, tickets, city events and special features, and many other features by image recognition. The user simply waved their smartphone poster, car, or other item, and the phone would recognize it.
- Subversion release manager
- AJAX libraries used: jQuery
- Extensive Mysql database manipulation
- Developed a custom Python framework
- Evaluating and prototyping against 3rd party systems for integrating

Front End & Back End Developer • Textura LLC • 09/07-05/08
- Part of a team of 15 developers responsible for restructuring a Python web application written in Webware for the construction of payment processing
- industry
- AJAX libraries used: jQuery and dojo
- Part of a 4-member agile team developing using pair programming and test-driven development
- Most tasks revolved around meeting business needs such as ACH processing, providing new features, and resolving customer complaints with the system
- Participated in group design and implementation of REST structure

EDUCATION

BSEE (Minor in CSE) • Northern Arizona University, Flagstaff