

Joshua Herman

Python Software Engineer | Backend API Design | DevOps & Cloud Expertise

 3316255728

 zitterbewegung@gmail.com

 <https://www.linkedin.com/in/joshuahjerman/>

 <https://github.com/zitterbewegung>

SUMMARY

I am a software engineer with 14 years of experience in software development from backend systems, website design and implementation and DevOps on Unix/Linux, and I am an expert in Python for data validation and enrichment and UI/UX for the desktop using the Here enterprise browser and the web. My key achievements include reducing QA deal compression debugging time with a React desktop app making a middleware rest microservice that improved the productivity of our QA time by reducing lookup times from minutes to seconds. I also lead a project that would perform same day settlement of deals and ETL of currency trades into backend data lakes. Also, to teach myself new technology trends I have made Securday which is a chatbot that performs network scanning using OpenAI's APIs which was featured at DEF CON which is the largest information security conference.

SKILLS

Python	AWS	Django	FastAPI	JavaScript	SQLAlchemy	JIRA	SDLC	Unix/Linux	RDMS	Finance	UI/UX
LLM	LangChain	PostgreSQL	API Design	ETL	Here (Enterprise Browser)	Swift	Xcode	Jenkins			

EDUCATION



Bachelors, Computer Science in the Engineering College

University of Illinois Chicago

 01/2009 - 01/2012

PROJECTS

Securday

 2024 - Present  Internet



This chatbot allows you to find public cybersecurity information such as DNS, HTTP, TCP / IP, UDP, multicast and related protocols given a URL IP address or range of IP addresses and query open source information such as reverse phone lookups and CVEs.

- The service has hundreds of people using the service to find out information.
- It also allows for lookup of CVEs and Open Source information such as reverse phone lookups.
- Launched at DEFCON 31 the largest information security conference to an audience of 500 attendees.
- Expanded the interface to have a web interface using Streamlit to increase users by 10x.
- Hosted on an Ubuntu server on a VPS on Linode.
- Protected against network attacks such as DDOS by using Cloudflare's mitigation services.
- Documented how the systems works and how to deploy on the GitHub repository.

EXPERIENCE

Software Engineer II Assistant Vice President

Bank of America



 10/2018 - 09/2024  Chicago, Illinois

As a part of the F/X post trade team I validated and enriched electronic trading feeds, integrated external APIs to calculate risk and created debugging tools for trade compression and trade analysis in Python and React using Here (Openfin)

- Experienced with Atlassian Suite products JIRA, Confluence and Bitbucket.
- Troubleshooted various issues with Electronic trading networks, and Voice Trading systems that supported currency trading.
- Supported the debugging system for trade compression using React managed CI and CD dependencies with Git, Bitbucket and Jenkins.
- Reduced time to test and debug a trade compression application by creating a Here (enterprise browser) app that interacts with a Flask microservice.
- Implemented the system with feedback of the UI / UX team to comply with internal interface guidelines for our apps on Here.
- Validated and enriched trade data to ensure downstream and upstream Distributed Systems would not ingest invalid data or can be debugged.
- Created a new feature that would allow for 200% more efficient settlement (same day settlement from the t+2 standard) of a currency trade by determining if it had an approved counterparty and also pulled data in from our risk analysis framework to show to the voice trader group.

Blockchain Engineer

Property Ledger



 08/2018 - 09/2018  Chicago, United States

Startup to manage properties using blockchains to prevent fraud and to track changes of ownership to a parcel of land.

- Achieved a 100% improvement in land management efficiency by designing a comprehensive parcel tracking app.
- Operated a Hyperledger (permissive blockchain) using the Sawtooth framework to add parcels into the blockchain.
- To minimize fraud the Ethereum blockchain was used to publish unique identifiers for each property and or parcel.
- Established and chose the appropriate middleware and backend services in Bootstrap, Flask, Web3 and Python.
- Deployed on the Azure cloud service hosted on Azure Linux.

DevOps Lead

Coinsailor

 04/2018 - 07/2018  Darien, IL

A cryptocurrency recommender using decision trees Web Application.

- Composed the design a cryptocurrency recommender web application with approximately thousands of users.
- Solved the problem of new model design by changing weights and using one hot encoding of questions to improve the User Interface and experience.
- Implemented the whole Front-end using Django, Bootstrap and jQuery.
- Collaborated in cleaning data with the team from the top one hundred cryptocurrencies white papers to create a dataset to make a recommender system.
- Used one hot encoding and designed the questions so that the appropriate weights using standard Data Science techniques.
- Modeled how an investor interested In cryptocurrencies would prefer other cryptocurrencies using a decision tree algorithm.
- Hosted on PythonAnywhere an online integrated development environment and web hosting service.

EXPERIENCE

Software Engineer

Unique Insurance Company

📅 09/2016 - 04/2018 📍 Niles, Illinois

Car Insurance company and underwriter.

- Designed an Insurance quotes using Angular and interfacing with a proprietary backend from a 3rd party vendor on a hybrid cloud.
- Deployed to AWS EC2 VMs using Flask and once quotes were given they were modeled as a JSON objects.
- Created a schema used to store the JSON objects into MongoDB.
- .Performed setup and administration of the MongoDB instance and worked with the Cloud Engineer for deployment, and maintenance.
- Determined AWS Transcribed for phone recordings to evaluate the accuracy and demoed it to the CTO to start implementation.
- Automated manual uploading of SR-22 filings by automating utilizing geofencing, SQLAlchemy, and ToscaWidgets for other departments using Cron.

Python Developer

Steersman Company

📅 06/2016 - 09/2016 📍 Greater Chicago Area

Worked integrating eCommerce to extend the ODOO CRM for drop-shipping.

- Enhanced the User Experience of the product presentation to Markdown instead of taking hours or more to make a listing with pictures, tagging and descriptions and added payment processing to the system.

Founder

NCategory

📅 09/2015 - 06/2016 📍 Darien, Illinois

A search engine to find similar shapes of objects given a point cloud of a given 3D model or a description.

- Developed the front end using React and the Searchkit library to make a front end to the Elasticsearch endpoint.
- Transformed Point clouds using the Point Cloud Library to shape classes such as cubes or spheres.
- Designed and managed PostgreSQL following Database Design patterns for storing data in PostgreSQL and synchronized that data into Elasticsearch.
- Deployed on the AWS Cloud using a cloud architecture with EC2, Route 53, Cloud Services.
- Utilized Docker containers and Travis CI/CD Build Tools running Ubuntu Linux and made bash scripts to orchestrate containers.
- Loaded classified point clouds using a Celery task queue with RabbitMQ and Redis for effective data handling.
- Tracked version control using Git and a private GitHub repository.

Web Programmer

CompuSystems

📅 04/2013 - 09/2015 📍 Broadview

I implemented Trade Show registration website for attendees and exhibitors from websites to local kiosk such as the SHOT show and E3

- Increased client's attendees to register through timely delivery of hundreds customized registration portals for marketing needs.
- Enhanced efficiency by analyzing client business logic and collaborating with resources on 100% of websites.
- Implemented websites using HTML5, JavaScript, jQuery CSS3, and Java to develop dynamic web pages to increase efficiency and correctness.
- Maintained the sites based on logging and or requests from the client or internal QA.
- Monitored system of show websites so that they would not go down or have problems.

WordPress Webmaster

Short Fat Otaku

📅 02/2013 - 04/2013 📍 Ontario, Canada

Used the WordPress CMS system to provide a website for an Anime Review Website.

Was implemented with PHP and MySQL and the blip.TV API.

UI was made with modern web standards. (HTML5 / JavaScript / CSS)

Designed the whole User Interface and customized WordPress look and feel

Research Programmer at the Computational Biology Laboratory

University of Illinois at Chicago

📅 01/2011 - 12/2012 📍 University of Illinois At Chicago

4G LTE Intern

Alcatel-Lucent

📅 06/2012 - 08/2012 📍 Naperville, IL

OPEN SOURCE CONTRIBUTIONS

Python Contributor

Python Software Foundation

📅 2016 - Present

Contributed bug fixes in the fraction module so that rpow works on arbitrary classes by not casting the result as a float.

Addressed outdated bug reports and issues related to unsupported macOS versions in Python.

Simplified the initialization of the Socket module by using a C emulating system.