JOHN SOLLY

Philadelphia, PA | JohnSolly.dev | linkedin@jsolly.com | linkedin.com/in/jsolly/

SENIOR SOFTWARE ENGINEER

Senior Software Engineer with over ten years of experience building cloud-native geospatial solutions. Adept at architecting geospatial infrastructures, implementing geospatial algorithms, and leading full-stack development. Experienced in collaborating with cross-functional teams to deliver mission-critical capabilities and driving technical decisions and best practices.

SKILL HIGHLIGHTS

Languages : Python | TypeScript | JavaScript | Golang | SQL/NoSQL | Shell/Bash | Java
Web Development: Vue | Svelte | Astro | React | Django | Node.js | Tailwind | IPFS | SQLalchemy
DevOps & Cloud: CloudFormation | Terraform | GitHub Actions | Docker | MongoDB | Postgres
AI & Machine Learning: TensorFlow | PyTorch | Scikit-learn | OpenAI | AWS Bedrock
Geospatial: Esri | ArcGIS | Mapbox | GDAL | Geopandas | PostGIS | Geoserver | Dask | Turf.js | Deck.gl | OpenLayers | Leaflet

CAREER HIGHLIGHTS

- **Technical Excellence:** Architected and deployed foundational geospatial infrastructure across multiple cloud-based applications, significantly enhancing scalability and performance. Led the integration of cutting-edge OGC standards and data formats like ZARR, COG, STAC, and PMTiles into mission-critical projects.
- **Increased Efficiency:** Achieved a 58% reduction in manual testing time through automated testing and rearchitecting manual QA test plans, saving thousands of dollars and accelerating project timelines.
- **Open-Source Contributions:** Develops and maintains open-source projects such as web3-geo-dashboard, ipfs-stac, and awesome-django-blog. Organized a community HOTOSM marathon, attracting 200 participants, including students, faculty, and community members. Successfully secured $500 funding for the event, enhancing engagement and participation.

PROFESSIONAL EXPERIENCE

API ENGINEER — JULY 2024 — PRESENT

HazardHub (A Guidewire Offering) | San Mateo (remote)

- HazardHub provides the most comprehensive set of property and casualty risk data in the P&C insurance industry. By leveraging over 1,400 risk factors for any U.S. address, HazardHub helps insurers underwrite faster, more accurately, and improve pricing.

SENIOR SOFTWARE ENGINEER — SEPT 2023 — JULY 2024

New Light Technologies | Washington D.C. (remote)

- Guide software decision-making and architecture, standardizing Amazon cloud services for cloud-native geospatial applications with Terraform.
- Lead individual contributor for two major projects utilizing serverless geospatial solutions for data-driven decision-making, emphasizing high coding standards, effective CI/CD, and agile/kanban development.

SENIOR GEOSPATIAL DEVELOPER — SEPT 2022 — SEPT 2023

EASIER Data Initiative | College Park, MD (Remote)

- Lead engineer for a team of 4 developers in agile/kanban development, focusing on decentralized cyberinfrastructure ang geospatial applications.
- Designed and executed ETL pipelines for large-scale data management, handling over 300TB of COG and ZARR data using decentralized storage systems like Filecoin and IPFS.
- Contributed to open-source projects such as ipfs-stac and web3-geo-dashboard on GitHub, enhancing geospatial data integration with GIS applications like QGIS and ArcPro.

INTEGRATION CONSULTANT — MAY 2021 — FEB 2022

Yellowfin Business Intelligence | Boise, ID (Remote)

- Developed and implemented innovative data solutions leveraging Yellowfin's APIs, orchestrating major upgrades, and maintaining system uptime within SLA bounds.
- Resolved complex production issues in cloud, on-premise, and hybrid environments.

SOFTWARE PRODUCT ENGINEER — MAY 2017 — MAY 2021

Environmental Research Institute (Esri) | Redlands, CA

- Over four years, I successfully managed numerous ArcGIS Dashboard releases as release manager and scrum master for a nine-engineer team. My role involved ensuring consistent, high-quality releases and effectively coordinating with internal product management, QA, localization, internationalization, and release teams.
- Implemented a dockerized automated regression testing harness, reducing manual testing hours by 58%.

SOFTWARE PRODUCT ENGINEER INTERN — JUNE 2016 — AUG 2016

- Developed impactful story maps and web applications used by state governors and constituents and showcased a JavaScript mapping solution at Esri UC to an audience of 14,000 industry professionals.

RELEVANT PROJECTS

U.S. GOVERNMENT SPENDING APPLICATION

- This serverless Vue.js dashboard, used by the U.S. Census Bureau, empowers non-technical decision-makers by streamlining demographic and geospatial data analysis. I led the development of Vue.js components, creating responsive UI elements for easy data visualization. On the backend, I implemented Python Lambda functions for ETL processes, converting census shapefiles into PMTILES vector tiles. Additionally, I set up Amazon API Gateway to proxy API requests to third-party and internal APIs, with internal APIs connected to S3 for efficient data retrieval and storage.

WEB3 GEOSPATIAL DASHBOARD

- Web3-geo-dashboard is a web3 mapping application that provides an intuitive 'at a glance' view of geospatial data stored in Filecoin deals. This platform is engineered with a multi-tiered storage solution, utilizing Hot (Amazon S3), Warm (IPFS), and Cold (Filecoin) data storage layers to serve data efficiently and cost-effectively. Users can easily access, analyze, and download diverse datasets, with the added capability to securely conduct imagery transactions using integrated crypto wallet features.

VIETNAM LOW CARBON EMISSIONS PLANNER

- A serverless application deployed on Amazon services using Terraform, I was crucial in developing dynamic model output functionality and adding Admin CRUD operations via AWS Cognito. I focused on transforming complex Excel data into an engaging, interactive web platform. This significantly enhanced user interaction and understanding, effectively visualizing Vietnam's strategies for carbon emission reduction.

IPFS-STAC

- Wrote 45% of the code for ipfs-stac, a Python package that seamlessly integrates STAC (SpatioTemporal Asset Catalog) with IPFS (InterPlanetary File System). This integration facilitates interaction with IPFS assets stored on STAC servers through native Python objects, enhancing accessibility and usability of geospatial data within the web3 ecosystem.

ADDITIONAL AREAS OF EXPERTISE

Software Engineering | Geospatial Technologies & Analytics | Database Management | SQL Performance Tuning | Web Development | Automation | DevOps | Cloud Computing | Serverless Architecture | Agile | Big Data | Data Warehousing and Star Schema | Test-Driven Development (TDD) | Paired Programming | Unit Testing | Technical Writing | Continuous Integration & Continuous Delivery (CI/CD) | Rapid Prototyping | Cross-Functional Leadership Technical Mentorship | ETL Pipeline Architecture | RESTful, SOAP, and JavaScript APIs | Security & Production Issue Resolution Migration & Upgrade Planning | User Authentication & Profile Management | Large Language Models (LLM) | Geospatial Algorithm Development | Visualization Tools & Libraries | Quality Assurance | Release Coordination

EDUCATION

- **Master of Science in Geospatial Intelligence**
  George Mason University — 2015-2017 — GPA: 3.93
- **Bachelor of Arts in Geoinformation Science**
  University of California, Santa Barbara — 2013-2015 — GPA: 3.85
- **Bachelor of Science in Computer Science** (In Progress)
  Open Source Society University (OSSU)