

JOHN SOLLY

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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 | Dask | Turf.js | Deck.gl | OpenLayers | Leaflet

CAREER HIGHLIGHTS

- **Innovation:** 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.
- **Ownership:** Sourced, hired, and mentored development teams, fostering a culture of excellence and growth. Successfully revitalized delayed projects by implementing performance optimization strategies, effective refactoring, and clear project roadmaps, ensuring timely delivery and high-quality outcomes.
- **Open-Source Contributions:** Developed and maintained 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

SENIOR SOFTWARE ENGINEER

SEPT 2023 — PRESENT

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

- Guide software decision-making and architecture, standardizing Amazon cloud services for deployments, adopting Vue.js for reactive front-ends.
- Led a major government project utilizing serverless solutions for data-driven decision-making, emphasizing high coding standards, effective CI/CD, and agile/kanban development.
- Assumed technical leadership in my first week at NLT, rescuing a delayed project. Implemented a turnaround strategy, focusing on refactoring for performance optimization and

reconfiguring the cloud deployment using Terraform CDK, ultimately delivering a successful solution to a satisfied customer.

- Developed and implemented a system to measure software engineering ROI, ensuring maximum value is delivered to the customer in each iteration.

SENIOR GEOSPATIAL DEVELOPER

SEPT 2022 — SEPT 2023

EASIER Data Initiative | College Park, MD (Remote)

- Hired and led a team of 4 engineers in agile/kanban development, focusing on decentralized cyberinfrastructure and technical growth.
- 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 application, currently used by NOAA and the U.S. Census Bureau, is crafted to empower non-technical decision-makers. It streamlines the analysis and interpretation of intricate financial and demographic data, significantly enhancing decision-making efficiency. Its intuitive interface and real-time integration have markedly improved transparency and accountability in governmental fiscal management.

WEB3 GEOSPATIAL DASHBOARD

- [Web3-geo-dashboard](#) is a revolutionary 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. Working alongside one other developer, 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)