JOHN SOLLY

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LEAD SOFTWARE ENGINEER

A strategic and dedicated Senior Software Engineer with a demonstrated history of working with geospatial applications and complex data solutions. A proven leader and mentor passionate about maintaining the highest code quality standards. Expertise in developing bespoke geospatial applications, owning product implementations, and driving engineering leadership. Well-regarded for documenting well, showing ownership, and excelling as a tech lead with a comprehensive background in software development, databases, web development, and DevOps.

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) | Advanced Algorithm Development | Visualization Tools & Libraries | Quality Assurance | Release Coordination

Languages: Python | TypeScript | JavaScript | Golang | SQL/NoSQL | Shell/Bash | SQL | Java
Geospatial: PostGIS | GeoPandas | SQLalchemy | GDAL | Dask | ArcGIS | Mapbox GL | Turf.js | Deck GL | OpenLayers | Leaflet
Databases RDS | Postgres | MongoDB | DynamoDB | SQLite | MSSQL | MySQL | IPFS
Web Development: Vue | Svelte | React | Django | Cloudflare | GitHub Actions | Bootstrap | Vite | TailwindCSS
DevOps & Cloud: Docker | Terraform | GitHub Actions | EC2 | S3 | RDS | IAM | Lambda | CloudWatch | Amplify

CAREER HIGHLIGHTS

- **Increased Efficiency:** Achieved a 58% reduction in manual testing time through automated testing and rearchitecting manual QA test plans; this efficiency gain saved thousands of dollars and enabled the team to reach feature completion two weeks earlier each quarter, significantly accelerating project timelines.
- **Innovation:** Championed the adoption of serverless technology stacks, reducing costs and complexities in geospatial application development. Additionally, I led the forefront in embracing the latest OGC standards and data formats, including ZARR, COG, STAC, and PMTiles. Pioneered integrating these cutting-edge technologies in critical projects, enhancing data processing speed, scalability, and infrastructure efficiency.
- **Leadership:** Successfully sourced, hired, and mentored entire development teams, fostering a culture of excellence and growth. Took charge of delayed projects, implementing effective strategies to steer them back on course and ensuring their successful delivery to satisfied clients. Standardized a UI component library and front-end framework across NLT, harmonizing development processes and enhancing product consistency.
- **Open-Source Contributions:** Developed and maintained open-source projects such as web3-geo-dashboard, ipfs-stac, and awesome-django-blog. Organized a 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, standardizing Amazon cloud services for deployments, adopting Vue.js for reactive front-ends, and implementing a uniform UI component library across all projects.
- Led a major government project, architecting a serverless solution with Amazon services for data-driven decision-making. Emphasized 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.
- Implemented a system to gauge development velocity, assigning effort levels to tickets in days and tracking progress in monthly iterations with specific epics. This approach streamlined project management and enabled accurate development estimates within a 10-day margin, consistently improving predictability and process efficiency.

SENIOR GEOSPATIAL DEVELOPER — SEPT 2022 — SEPT 2023

EASIER Data Initiative | College Park, MD (Remote)

- Hired and led a skilled 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, skillfully handling over 300TB+ of COG and ZARR data using decentralized storage systems like Filecoin and IPFS.
- Contributed to open-source projects 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 REST, SOAP, and JavaScript APIs and successfully orchestrated a major two-version upgrade for Yellowfin's largest ISV, enhancing system capabilities and performance.
- Addressed and resolved dozens of complex level-three production issues in cloud, on-premise, and hybrid environments, diligently maintaining Yellowfin's uptime and availability within the bounds of our Service Level Agreements (SLAs).

SOFTWARE PRODUCT ENGINEER — MAY 2017 — MAY 2021

Environmental Research Institute (Esri) | Redlands, CA

- Over four years, I successfully managed numerous 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 QA, localization, internationalization, and release teams.
- Implemented a dockerized automated regression testing harness using Python, Selenium, and Jenkins, resulting in a remarkable reduction of manual testing hours from 240 to 100 per quarter, a 58% efficiency gain.

SOFTWARE PRODUCT ENGINEER INTERN — JUNE 2016 — AUG 2016

- Led the development of impactful story maps and web applications used by state governors and constituents and showcased advanced JavaScript mapping solutions 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 building the Energy Efficient Retrofits page. Working alongside three developers, 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.

EDUCATION

Master of Science, Geospatial Intelligence | ***George Mason University*** | GPA: 3.93

Bachelor of Arts, Geoinformation Science | ***University of California, Santa Barbara*** | GPA: 3.85

Bachelor of Science, Computer Science (In Progress) | ***Open Source Society University (OSSU)***