

# Paul Walko

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## EMPLOYMENT

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### Senior DevOps Engineer

Aug. 2019 – Present

*Ozmo, Inc (Associate → Senior, Jan. 2023)*

*Blacksburg, VA*

- **AWS Architecture:** Architect production applications (ECS/Fargate, Lambda, RDS, OpenSearch) for maintainability and security; lead quarterly DevOps planning as most senior DevOps Engineer
- **AI:** Experienced with using Claude Code to quickly troubleshoot AWS, all from the CLI; Adapted existing CI/CD pipelines to be more “AI Friendly” allowing other engineers to have less friction when deploying
- **SOC 2:** Own end-to-end compliance program: IAM access reviews, vulnerability management, CI/change controls, audit logging, encryption, backup/DR testing, vendor risk reviews; liaison with external auditor
- **Observability:** Built ELK + Grafana stack ingesting ~30M log events/day; primary system for production alerting and incident response
- **CI/CD:** Leading migration from Jenkins to GitHub Actions; embed with engineering teams on pipeline design and AWS CDK adoption

### Systems Engineer

Jan. – July 2019

*Solers, Inc*

*Arlington, VA*

- Worked with Docker Swarm and Ansible
- Deployed central logging solution for clustered environment

### Cyber Security Engineer

May 2017 – Aug. 2018

*Cisco*

*Raleigh-Durham, NC*

### Research Assistant

Sep. 2016 – Dec. 2017

*Hume Center at Virginia Tech*

*Blacksburg, VA*

## SKILLS

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**AWS:** API Gateway, CloudFormation, CloudFront, CloudWatch, EC2, ECS/Fargate, ElasticSearch/OpenSearch, Lambda, RDS, Route53, S3

**GIS Tools:** QGIS, GDAL, Leaflet, GeoServer, MapProxy

**Languages:** Bash, C, Java, JavaScript/NodeJS, Python, Ruby

**Tools:** Ansible, AWS CDK, Docker, GitHub Actions, Google Workspace, Git, Grafana, Helm, Jenkins, Kubernetes, Librato, Linux, NewRelic, Tailscale, Ubiquiti

**Other:** Amateur Radio (KN4VDC), Argentine Tango (assist with lessons)

## PROJECTS

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### Self-Hosted Services

- **Kubernetes Cluster:** IPv6-only multi-node k8s cluster on Tailscale running Browsertrix, Forgejo, Immich, Nextcloud, RustFS
- **Cavepedia:** github.com/cavepedia/cavepediav2. Semantic search + chat over decades of NSS caving documents in partnership with the National Speleological Society; pgvector embeddings, FastMCP server, PydanticAI agent, Auth0 RBAC.
- **Mergin Maps:** maps.caving.dev. Used on remote caving expeditions to manage GIS.
- **Mastodon:** social.bigcavemaps.com
- **Geoserver/Leaflet/MapProxy:** Used to analyze lidar and find potential caves.

## FOSDEM 2026 Air Quality Monitoring

Feb. 2026

- Co-built distributed CO<sub>2</sub>/temp/humidity sensor network deployed across 20+ devrooms (Meshtastic mesh, MQTT, Postgres, Grafana); results shared with FOSDEM staff for ventilation planning. [paul.walko.org/blog/2026-02-07\\_fosdem-part2](http://paul.walko.org/blog/2026-02-07_fosdem-part2)

## Free/Open Software Contributions

- **2013 – Present:** Use and contribute to OpenStreetMap, especially not well known trails.
- **2019 – Present:** Archive Team – Help archive Internet services and manage massive amounts of data.

## ORGANIZATIONS

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**VPI Cave Club** | *vpicave.club* (Student Grotto of the NSS) 2020 - Present

- **Survey/Cartography:** Survey and map unexplored cave passage, including data entry and processing to create a finished map.
- **Training:** Teach new members basic caving skills, including vertical competence when climbing or abseiling rope.
- **Events:** Help organize regional caving events with 200+ attendees.

**Virginia Tech Linux/Unix Users Group (VTLUUG)** | *vthlug.org*, *github.com/vthlug* 2016 - Present

- **FreeIPA/LDAP:** Maintain accounts for email, shell access, and webserver.
- **Rebuilt Infrastructure:** Updated services to deploy with Ansible and run all services with Docker.
- **Organized funds:** Obtained \$1300 for new servers and equipment; oversaw purchasing additional components.

**Outdoor Club at Virginia Tech (OCVT)** | *ocvt.club*, *github.com/ocvt* 2017 - Present

- **Dolabra:** Built backend API in Golang and SQLite + front-end in plain HTML/JavaScript. Used OpenID Connect for auth, Stripe for payments, and Docker for testing and deployment in AWS.
- **Appalachian Trail Maintenance:** Regularly clear trail of trees, brush, and clean shelters.

## TALKS

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**Cave Rescue Communications** (Toorcamp 2024): [archive.is/iX4s8](https://archive.is/iX4s8)

**Austrian Expedition to the Loser Plateau** (NSS Convention 2023)

**Newberry's Cave Exploration** (NSS Convention 2022)

## EDUCATION

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**Virginia Tech**

*Bachelor of Science in Computer Science; Minor in Cyber Security*

Blacksburg, VA

*Aug. 2015 – Dec. 2018*