

# Paul Walko

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## EMPLOYMENT

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### DevOps Engineer

Aug. 2019 – Present

*Ozmo, Inc*

*Blacksburg, VA*

- **Observability:** Built monitoring stack with Grafana, OpenTelemetry, ELK, Kafka
- **AWS ECS/Fargate:** Helped migrate from Elasticbeanstalk
- **SOC 2:** Key component of SOC 2 Audit process
- **CI Testing:** Significantly improved PR turnaround time and developer happiness with automated testing
- **OpenVPN Cloud:** Implemented always on split-tunnel VPN to support remote work
- Helped build event-driven search service in AWS:  
<https://ozmo.com/blog/building-a-world-wide-real-time-search-service/>

### Systems Engineer

Jan. – July 2019

*Solers, Inc*

*Arlington, VA*

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

### Research Assistant - Analyzed Netflow data

Sep. 2016 – Dec. 2017

*Hume Center at Virginia Tech*

*Blacksburg, VA*

- Learned about issues with large data sets
- Intercepted data from keyboards, mice, and other BLE devices
- Created Bluetooth pen-testing device with Ubertooth One and worked with devs on IRC

## PROJECTS

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**GitHub:** [github.com/paulwalko](https://github.com/paulwalko) **Gitea:** [git.seaturtle.pw/pew](https://git.seaturtle.pw/pew)

### Self-Hosted Services

- **Mergin Maps:** [maps.caving.dev](https://maps.caving.dev). Used on remote caving expeditions to manage GIS.
- **Mastodon:** [social.bigcavemaps.com](https://social.bigcavemaps.com)
- **Geoserver/Leaflet/MapProxy:** Used to analyze lidar and find potential caves.
- **Cavepedia:** [git.seaturtle.pw/pew/cavepedia](https://git.seaturtle.pw/pew/cavepedia). Architected pipeline to import old document, perform OCR, analyze readability, and index into a fully offline searchable application for use in the field.
- **Minio, Gitea, Photoview**

### Free/Open Software Contributions

- **2013 – Present:** Use and contribute to OpenStreetMap, especially not well known trails.  
[openstreetmap.org/user/bigmapscaver](https://openstreetmap.org/user/bigmapscaver).
- **2019 – Present:** Archive Team: Help archive Internet services and manage massive amounts of data.

## ORGANIZATIONS

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**VPI Cave Club** | *vpicave.club* 2020 - Present

*Student Grotto of the National Speleological Society (NSS)*

- **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)** | *vtluug.org, github.com/vtluug* 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 Open-ID 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.

**Amateur Radio** | Callsign: KN4VDC 2019 - Present

## TALKS

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**Cave Rescue Communications** (Toorcamp 2024): <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** Blacksburg, VA

*Bachelor of Science in Computer Science; Minor in Cyber Security* Aug. 2015 – Dec. 2018

**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:** Docker, Google Workspace, Git, Grafana, Jenkins, Librato, Linux, NewRelic, Ubiquiti