CHRISTOPHER DAVENPORT

Geospatial Systems & Data Automation Professional

ArcGIS Enterprise Administration | Python ETL | SQL Server | Web GIS | LRS & Infrastructure Data

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PROFESSIONAL SUMMARY

Enterprise GIS administrator and Python automation developer for the West Virginia Department of Transportation's multi-environment ArcGIS Enterprise deployment (12+ servers). Manages services, users, security, patching, and SQL Server-backed enterprise geodatabases; builds production ETL with pre-validation QC; and publishes the statewide LRS network to services, hosted feature layers, and open data. Named member of WVDOT's 2026 Esri Special Achievement in GIS (SAG) Award team and a selected 2026 WVDOT AI Champion. Field-grounded background in utility vegetation management, environmental consulting, and crew leadership. Penn State MGIS candidate (4.0 GPA).

TECHNICAL SKILLS

- **Enterprise GIS Administration:** ArcGIS Enterprise (Portal, Server, Data Store), ArcGIS Online, multi-environment deployments, service management and performance monitoring, users/roles/groups and access separation, ArcGIS Enterprise and Windows patching/upgrades, SQL Server enterprise geodatabase configuration, data store registration, physical-to-virtual migration
- **Python & Automation:** Python, ArcPy, ArcGIS API for Python, pandas, ETL pipelines with pre-validation QC, ArcGIS Notebooks, geoprocessing services and script tools, Arcade, SQL, R, PowerShell, Git/GitHub version control; FME (working knowledge: troubleshooting and Python-orchestrated workspaces)
- **Web GIS & Development:** ArcGIS Maps SDK for JavaScript (ArcGIS API for JavaScript), Leaflet, Turf.js, GeoServer, REST services, GeoJSON, HTML/CSS/JavaScript, Vite, Bootstrap/Sass, AWS S3; Experience Builder, Dashboards, StoryMaps, Survey123, Field Maps/Collector
- **Data Management & Analysis:** Linear Referencing Systems (LRS) / Roads and Highways, enterprise geodatabases, hosted feature layers, open data publishing, metadata management, schema design, QA/QC and topology, Spatial Analyst, ArcGIS Pro, QGIS
- **Operations & Communication:** IT ticket resolution, network troubleshooting with infrastructure teams, technical training and instruction, documentation, stakeholder and field-crew coordination

PROFESSIONAL EXPERIENCE

GIS Program Analyst 1 — June 2024 – Present

West Virginia Department of Transportation, GIS Services / IT Division | Charleston, WV

Focus: enterprise GIS administration, Python automation, LRS data services

- Administer a multi-environment ArcGIS Enterprise deployment of 12+ servers (Portal, Server, Data Store), managing the agency's GIS services to keep performance and availability steady for statewide users.
- Apply ArcGIS Enterprise and Windows patches and upgrades; configure SQL Server for enterprise geodatabases and registered data stores across environments.
- Own user administration: onboard new users and manage roles, groups, permissions, and separation of access between user types and environments.
- Resolve IT tickets for service and application issues; work with network staff to trace handshake failures, dropped connections, and other connectivity faults in the GIS software stack.
- Served on the small GIS/IT team that migrated the full ArcGIS Enterprise system from physical to virtual servers — Portal/Server configuration, SQL setup, data store reconciliation, republishing, testing, and cutover — with minimal user downtime.
- Designing and building a four-phase Python publication pipeline for ~20 statewide reference layers: FME-driven ingestion, a pre-flight validator that audits staged data against production on seven checks (projection, schema, field types, string length, domains, record deltas), archiving, connection lockdown, metadata injection, and service refresh.
- Write production Python ETL (ArcPy, ArcGIS API for Python, pandas) with fail-fast QC, logging, and runtime-only credentials; Git-versioned with a PowerShell task launcher and operator documentation for non-technical staff.
- Manage the statewide LRS network export into ArcGIS services and hosted feature layers, including layers published to WVDOT's public open data portal; maintain metadata for published datasets.
- Teach classes for state staff on accessing WVDOT's RESTful GIS services and integrating them into maps, applications, and analysis.
- Lead an active MIRE-aligned traffic signal asset inventory project: schema planning, hybrid Enterprise/ArcGIS Online editing workflows, role-based permissions, QA/QC procedures, and UAT planning.
- Build Arcade expressions, Experience Builder apps, dashboards, ArcGIS Notebooks, and geoprocessing services for operational users; fulfill spatial data and FOIA-related requests.

- Named member of the WVDOT development team recognized with a 2026 Esri Special Achievement in GIS (SAG) Award for the agency's data-transparency platform.
- Selected as a 2026 WVDOT AI Champion, one of a small group of staff chosen as change agents for AI adoption: evaluate AI tools for GIS and data workflows, build AI-assisted Python development and documentation practices with human validation, and help coworkers adopt them.

Arboriculture & Client Solutions Specialist **Jan 2021 – Mar 2023**

The Davey Tree Expert Company | Fraziers Bottom, WV

- Quoted and closed more than $900K in tree and lawn care sales in 2022; grew annual renewal business through client needs analysis.
- Built ArcGIS Pro maps for tree inventories, residential planning, and timber estimates to support client decisions and project scoping.

Contract Utility Forester & GIS Specialist **Jan 2020 – Jan 2021**

Davey Resource Group (utility vegetation management contract) | Charleston, WV

- Configured and rolled out an ArcGIS Collector field-mapping system that replaced paper maps for 10–25 field users, cutting right-of-way QC audit time by roughly 50%.
- Trained non-technical crew members to pin exact locations of reported outages and vegetation clearance deficiencies, turning field reports into targeted, verifiable QC audits.
- Used GPS-located records to settle property and work-scope disputes with utility clients in real time, reducing disputes and repeat site visits.
- Audited utility tree crews in the field for safety standards and environmental compliance across distribution corridors.

Environmental Specialist **Oct 2018 – Aug 2019**

GAI Consultants | Charleston, WV

- Collected GPS field data, designed database schemas to organize it, and produced ArcGIS Pro mapping for permitting and regulatory compliance on commercial construction projects.

GIS Analyst (Fixed-Term) **Aug 2018 – Oct 2018**

West Virginia Department of Environmental Protection | Charleston, WV

- Helped build a public viewer for active and inactive Clean Water Act (NPDES) permits through georeferencing and heads-up digitization; completed NPDES training.

Foreman & Safety Coordinator **Jan 2017 – Jul 2018**

Bartlett Tree Experts | Charleston, WV

- Led a four-person crew and the branch-wide safety program, including accident investigations, corrective action plans, and new-hire onboarding.

SELECTED PROJECTS

- **WV Part 107 Airspace Assistant —** Live web map for FAA airspace awareness: GeoServer-rendered tile cache served from AWS S3, with Leaflet, Turf.js, and GeoJSON airspace layers.
- **GIS Python Automation Toolkit (GitHub) —** Sanitized enterprise automation: data store inventory, migration hostname swap, Admin REST service-usage reporting, QA/QC matching, and archiving.
- **WV Roadway Reporter —** Penn State graduate implementation design for roadway deficiency reporting: Survey123 intake, Experience Builder review, LRS-aware validation, and cost/benefit analysis.

EDUCATION

- **Master of GIS (MGIS)** — Penn State University — Expected Spring 2027 — GPA 4.0
- **Post-Baccalaureate Certificate, Geographic Information Systems** — Penn State University — May 2024 — GPA 4.0
- **B.S., Environmental Science** — Marshall University — 2016 — Minors: Geology; Integrated Science & Technology

AWARDS, CERTIFICATIONS & AFFILIATIONS

- **2026 Esri Special Achievement in GIS (SAG) Award** — WVDOT development team member
- **WVDOT AI Champion (2026)** — selected change agent for agency AI adoption
- ISA Certified Arborist (MA-6335A) • CDL Class B • NPDES training • FAA Part 107 (in progress)
- URISA • West Virginia Association of Geospatial Professionals (WVAGP) • Geospatial Professional Network (GPN) • Society for Collegiate Leadership & Achievement (SCLA)