

Full Stack Developer - Alan L. Clack

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HIGHLIGHTS OF PROFICIENCIES

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|------------------------------|----------------------------------|------------------------------------|
| ➤ Web Development | ➤ Analysis Workflow Automation | ➤ Knowledge Capture and Transfer |
| ➤ Software Development | ➤ Data Management and Pipelining | ➤ Quality Control and Assurance |
| ➤ Agile/Scrum (DevOps CI/CD) | ➤ ML Training/Implementation | ➤ Training, Instruction, Mentoring |

Passionate Full Stack Developer with 8 years of development/programming experience and over 20+ years of background in analysis, visualization, and DevOps team experience. I also have a broad and deep background in Geospatial Information Systems (GIS) across all development/software engineering aspects. I am fortunate to have worked in both solo and team-oriented environments as an analyst, team lead, and developer/programmer. I've supported a wide range of complex customer requirements. Experience ranges from creating tools and workflows for standard desktop software or servers, implementing web portals and business-oriented dashboards both on-premises and with cloud-based options, standing up front-end interfaces for customer interaction, to application development involving analytical capabilities with business and geospatial applications. I've been able to adapt to custom requirements to meet specific operational and business needs, often bridging a much-needed gap between dedicated developers, business analysts, non-technical team members, and clients. Trained instructors and students alike in aspects of hardware, software, analysis, and emerging development libraries/frameworks, technologies, and methodologies.

PROFESSIONAL EXPERIENCE

Bureau of Land Management (BLM) – Xentity LLC

Durham, NC (*remote*) – January 2023 to January 2026 (*3 years*)

Full Stack Developer

- Full Stack Developer for the Bureau of Land Management (BLM) assigned to a government web/application development team. Initial objectives were to transfer and modernize a suite of 25+ specialized tools and web maps coded in .NET/XAML with a discontinued Geocortex software suite and deprecated ESRI Web App Builder applications. Modernization efforts took sparsely documented Geocortex tools and built from scratch the same capability along with various customer and business owner requests in a JavaScript environment of the rebranded VertiGIS software suite and preferred ESRI Web Experience Builder options. Most tools were also recreated in low-to-medium code options to translate well for newer developers.
- After overhauling the initial set of tools, more requests for rapid prototyping and testing or modernization came in from various government teams across several states. These requests spanned across forestry services, conservation efforts, and business analytics utilizing VertiGIS/ESRI services, Power Automate and Business Intelligence Dashboards, and ArcGIS Pro add-on development. These projects had various tech stacks that included primarily Java, JavaScript, and C#/.NET/Graph API
- A suite of Python 2 geoprocessing tools was updated to Python 3 ArcGIS Server and REST API components, with many plugins getting offloaded to server architecture that scaled better to the in-house analysts. Modernization of these tools included updating 4 key database connections, queries, or pipelines that were undergoing a complete transfer in architecture primarily from Oracle to SQL or cloud-based options within Azure.
- Trained new and mid-level GIS developers and GIS analysts in DevOps basics to introduce them to government development teams utilizing an Agile/Scrum setup. Utilized Azure DevOps and converted file storage systems into proper codebases with versioning and loose implementations utilizing Git-oriented processes. All non-low-code tools and processes were fully captured in documentation in Azure DevOps Boards and OneNote wiki-style portals of the updated procedures of specialized tools. Almost all tools were built, as requested, in a wizard walk-through format with built-in documentation to reduce the requirement for documentation as well.

United States Department of Agriculture (USDA) - TSPi

Fayetteville, NC (*remote*) – January 2022 to January 2023 (*1 year*)

DevOps Developer

- Developer for the United States Department of Agriculture – Farm Production and Conservation (USDA-FPAC) working in a SAFe Agile CI/CD train with nearly 100 personnel. Worked within a subset of this DevOps train on a team of 15 personnel to include business owners, scrum masters, varying software developers, and data engineers. This team delivered software and data for new web applications and maintenance on existing government products and pipelines. Worked on backend data pipelining and databases utilizing petabytes of raster data and a large amount of supplementary vector data over 3 core government GIS datasets. Supplemented all changes to data processing to well-established workflows by providing more in-depth and technical write-ups as well as updating older SharePoint documentation processes to newer Azure DevOps boards and other documentation portals. Assisted in helping Scrum Masters set up automations for changes in data pipeline processes to automatically assign and alert appropriate teams and personnel that were decoupled from the DevOps environment.
- Additional areas of work include the management, publication, and visualization of country-wide geospatial datasets utilizing various ESRI software and in-house developer tools. Developed custom back-end server tools and programs to support data incompatible with the ESRI stack. Converted metadata to support DCAT federal, open data, and ISO schemas. Built front-end web-based mapping applications via ESRI ArcGIS Online and cloud-based architecture options via AWS that utilize in-house published data, REST APIs, and other sources.
- Providing pivotal GIS-based expertise for existing projects and applying industry-leading practices to significantly decrease previous workloads and provide product owners and customers with time and cost savings. Acted as a liaison for teams that were interested in pursuing Artificial Intelligence (AI) and Machine Learning (ML) capabilities. Pulling from previous ML experience of the real capabilities and issues with AI to help higher-ups determine true cost and sustainability as well as where, or if, it was going to be effective.

NS2 Mission (Formerly Apex Expert Solutions LLC)

Fort Bragg, NC – January 2019 to January 2022 (*3 years*)

GIS Developer

- Continued to lead a specialized team focused on cybersecurity, geospatial analysis, and development projects while transitioning to a more dedicated remote software and web developer role. Worked on SharePoint site administration, application development that provided specialized visualization and geospatial analysis, and command-and-control software with web-based mapping components.
- Assigned to highly customized solutions and projects with open-ended goals that required collaborative working knowledge of systems being used by end users. Proficient in front-end web-based technologies through standard HTML, CSS, JavaScript stack. Knowledgeable in command-line (CLI) GIS-based libraries such as GRASS/GDAL for analytical processing and data manipulation.
- Expanded backend development through NodeJS and desktop application development through Electron and Python scripting. Worked with a wide range of additional GIS-related libraries, frameworks, and systems such as Leaflet, Mapbox/MapboxGL, CesiumJS, OpenLayers, ArcGIS Online ecosystem, TurfJS, GeoServer, PostgreSQL/PostGIS, and MySQL. Software and data were hosted and updated through Amazon Web Services for front-end users.
- Regularly attend DevOps and scrum meetings for projects related to command-and-control and analytical/visualization software administered through an Atlassian software platform: Bitbucket, Jira, and Confluence. Regularly requested to attend other DevOps meetings related to other customer development efforts as a consultant on development hurdles, especially related to GIS-related libraries and capabilities that would enhance the program's spatial awareness and analysis capabilities. Handled the majority of Confluence documentation for knowledge capture and transfer of analytical operations and specialized power-user

software capabilities.

APEX EXPERT SOLUTIONS LLC.

Fort Belvoir, VA – April 2015 to January 2019 (*4 years, 8 months*)

Geospatial Team Lead

- Advanced the rapidly growing Geospatial Training and Analysis Cell (*GTAC*) to support the Night Vision Electronic Sensors Directorate (*NVESD*) CONUS/OCONUS simulation lab, Full Motion Video (*FMV*), Bi-Static Surveillance System (*BSS*), and Imagery Intelligence (*IMINT*) teams. The primary team went from 5 personnel to 25 personnel across several disciplines.
- Expanded support for business customers to mass data management and dissemination, scripted and automated multicore parallel spatial analysis with a NodeJS, Python, and GDAL stack that heavily reduced time spent processing ever-growing datasets/databases. These efforts took command-line options for analysts to user-friendly server applications that any end user could navigate with far fewer human errors being introduced. Advanced geospatial visualization techniques to include 3D modeling using multiple mapping frameworks on projects that involved MapBox, CesiumJS, and ArcGIS Online services.
- Overhauled SharePoint and .NET online collaboration environments and tools to support overseas teams to allow for quick-reaction products and sustainable production efforts. Customers requiring advanced methods of analysis and visualization but restricted to limited software and hardware configurations are still receiving quality products and analysis due to the team's expanded capabilities and expertise.
- Data services were built for on-premises servers and hosted in AWS and SharePoint cloud environments. Developed analytical capabilities for applications on mobile tablet hardware for field service engineers. Advanced support for programs helping expand the company's contracts within the workspace. Business owners and stakeholders started receiving more reliable data, actionable intelligence in less time, and were provided with customized tools and software due to growing and combined efforts.
- Updated documentation and Standard Operating Procedures (*SOPs*) to include interactive options for command-line outputs so analysts and less tech-savvy users could input variables and get full and appropriate inputs for the workflows outlined.

EDUCATION & TRAINING

Northern Virginia Community College - Annandale, Virginia

B.S. degree in Computer Science and Engineering – (2015)

National Geospatial-Intelligence Agency College (NGC-E) - Springfield, Virginia

Basic Geospatial Intelligence Specialist Course (BGIS) – (2011)

Intermediate Geospatial Intelligence Specialist Course (IGIS) – (2013)

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