Matthew Scanland

540-267-5538 | mkscanland@gmail.com | [LinkedIn](https://www.linkedin.com/in/matthew-scanland/) | [GitHub](https://github.com/mkscanland) | [Portfolio](https://portfolio.matthewscanland.com/)

**Professional Success**

Virginia Tech Center for Power Electronics Systems (CPES), Blacksburg, VA, 2019 – Present

**Software Engineer**

* Responsible for working unsupervised in designing and developing web applications for public-facing and internal websites; including iterating through the full lifecycle of an application and coordinating workloads on schedule.
* Augment custom-built PHP framework by modifying SQL queries and data retrieval algorithms.
* Effective communication with diverse team to deploy and maintain Docker containers, Apache web servers, and Azure technical solutions.
* Drive the restructuring and normalization of MySQL schema to optimize performance and space requirements.
* Liaise with external companies and departments to implement technical solutions.

Core Competencies

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| * Web Applications * Project Leadership | * Problem-Solving Expertise * Software Architecture | * Documentation * Communication |

**Significant Projects**

Full Stack Internal Website Rebuild - [*https://portfolio.matthewscanland.com/rebuild/*](https://portfolio.matthewscanland.com/rebuild/)

* Spun-up a new web server and moved all pre-existing HTML and Google Apps Script to a LAMP stack featuring a custom PHP framework.
* Rebuilt pre-existing applications from Apps Script environment to a custom PHP MVC framework with a REST API.
* Implemented a multi-factor phpCAS login system for greater security.
* Built admin pages and subsections featuring route protection and permissions.
* Established a MySQL database, focusing on interaction between contained applications.
* Cleaned up existing core code to improve readability, algorithm speed, code scalability, and functionality.

Lab Validation System - [*https://portfolio.matthewscanland.com/validations/*](https://portfolio.matthewscanland.com/validations/)

* Built the complete internal Lab Validation System; this system tracks and calculates billing totals using student hours, accounts, holidays, vacations, and other data.
* Devised an SQL database schema that enabled future modifications and quick retrieval of data.
* Streamlined the validation process for all employees; this resulted in cutting the validation timeframe to 1/4.
* Allowed staff to quickly view and edit information using a single-page app; this included statistics, missing signatures, exporting data as a CSV, and viewing activity in a FullCalendar UI.
* Integrated the student vacation system to further automate the validation process.

Azure Data Lake Implementation - [*Guide*](https://portfolio.matthewscanland.com/files/Azure-Data-Lake-Plan_Public%20Copy.pdf)

* Investigated the feasibility and requirements for building a data lake on Azure, focusing on cost, infrastructure, and potential benefits for the organization.
* Conducted in-depth analysis of data ingestion strategies for transferring on-premise data to the Azure Data Lake, including Azure Data Factory, Azure Data Box, and Azure ExpressRoute.
* Designed a comprehensive data security and compliance strategy, Azure Firewall, and Azure role-based access control (RBAC).
* Developed a cost estimate and projected return on investment (ROI) for the data lake implementation, taking into account factors such as data storage, data transfer, and compute resources.
* Created a detailed roadmap for the data lake implementation, including data migration planning, infrastructure setup, and integration with existing systems and applications.

**Technical Skills**

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| Programming Languages: | CSS, JavaScript, Java, JQuery, PHP, Python, SQL, C# |
| Tools: | .NET, Azure, EF Core, Apache, Docker, ElasticSearch, Git, Linux, phpCAS, RESTful API, Windows, Vue, AWS |

**Education**

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| Virginia Tech  BS Computer Science | Blacksburg, VA |