Matthew Scanland

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**Professional Success**

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

**Software Engineer**

* Responsible for working unsupervised in architecting web applications for public-facing and internal websites; including iterating through the full-stack lifecycle of an application and coordinating workloads on schedule.
* Improved code maintainability by modifying PHP framework, SQL data retrieval algorithms, and SQL schema.
* Collaborated cross-functionally with multiple non-technical and technical teams to understand their needs and requirements, translating them into applications and various IT solutions.
* Reduced API requests response time by designing and developing architecture for document upload and retrieval.
* Expanded center knowledge by experimenting and presenting Tech Talks on needed technologies such as MariaDB, Docker, ElasticSearch, Git version controlling, and Azure to move the company from outdated tech.

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.
* Designed and implemented 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 a SQL database schema that enabled future modifications and quick retrieval of data.
* Streamlined the validation process for all employees, 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 creating storage 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 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 |