

# 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needed technologies such as MariaDB, Docker, ElasticSearch, Git version controlling, and Azure to move the company from outdated tech.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

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

## SIGNIFICANT PROJECTS

Full Stack Internal Website 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/>

- 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](#)

- 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

PROGRAMMING LANGUAGES:

TOOLS:

CSS, JavaScript, Java, JQuery, PHP, Python, SQL, C#

.NET, Azure, EF Core, Apache, Docker, ElasticSearch, Git, Linux, phpCAS, RESTful API, Windows, Vue, AWS

## EDUCATION

VIRGINIA TECH  
BS COMPUTER SCIENCE

Blacksburg, VA