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| **Michael T. Richards – Software Engineer**  Englewood, CO 303-649-2143  [michael.richards@ucdenver.edu](mailto:michael.richards@ucdenver.edu) |<https://www.linkedin.com/in/michael-r-16b962164/> | portfolio: richarmi.github.io |
| Skills |

C , C++, Python, SQL, HTML, CSS, Javascript, Java, JQuery, Node.js, MongoDB, React.js, Mongoose, Github/GitLab/Git, Trello, JSON, Unix\Linux, Android, Neo4j, Mac OS, API, Full CRUD, Arduino, MATLAB, Perl, Python TK library (GUI), AWS, Cybersecurity, Terraform, Docker, Kubernetes, Jenkins.

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| Education |

ZICT – AWS Practitioner Badge, October 2024; Completion of DevOps coursework (Badge forthcoming)

Front Range Community College – IBM Cyber Security badges, August 2024

General Assembly – Immersive Full-Stack Web Development Program Certificate, 2018

Udemy Online Courses – Certificates of Completions – Learned Website Penetration Testing and Website Hacking, 2018

University of Colorado at Denver – B.S. Computer Science, 2016

Community College of Denver – A.S. Computer Science, 2009

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| Summary of Qualifications |

* **Perl** (scripting) – Implemented program scripts for finding and parsing logs, finding similarities/differences in file/directory contents using a set-theory-based library, monitoring the ELK stack’s processes and daemons on different domains, date-time conversion between epoch and standard string formats, pattern-matching strings/arrays using a pattern-matching library, and running quicksort and insertion-sort algorithms. Worked on fixes for programs/scripts for finding a user’s credentials/certs and reading crons. Implemented object-oriented data-structures pointer constructs.
* **Perl Project** – Created a log-grepping tool and its documentation. Also implemented getOptions for its following arbitrary options on a command-line prompt: Date-time setup, case option, block-grepping options, debugger mode, file output/path destination, search pattern, secondary prompt, and help documentation.
* **Python** Programming (scripting) - Created and implemented byte, stack, and searching algorithm programs.
* **Python Project** – Created a Graphical User Interface (GUI) for a log-grabber python script with the following features: compilation construct using the **Waterfall** concept, multiprocessing/multithreading, a documentation page within the GUI, and a viewer for displaying the running states of threads/processes, their activity states, and the number of errors and what they are. Also created a means for the GUI to assemble together command strings based on the user’s choice of options to be conveyed to the GUI’s provided log-grabber script.
* **Android** App Programming – Created a number of functions utilizing troubleshooting and complex engineering and design concepts for a First Responder’s Personal Electronic Device (FirstNET Engineering internship as student trainee).
* **C & C++ Programming -** Used inheritance, encapsulation, networking, stream I/O and random access file I/O.Implemented different sorting algorithms using C++. Developed Dijkstra’s algorithm program in C++. Developed the Knuth-Morris-Pratt and finite-state-machine pattern-matching algorithms. Developed a C++ parsing program for use with a command prompt to create and add new user defined commands. Worked on fixes for FTP/SFTP (**Linux**). Also implemented a socket program for client/server command processing program for print jobs. Performed unit testing.
* **Java** Programming (scripting) – Used various packages provided by the Java platform, stream I/O, random access file I/O, and both extending (inheritance) and collection classes. Developed byte and matrix implementation programs. Developed an encryption program in C++ and a counterpart in Java. Developed application processes to manipulate a **Neo4J** graph database and output search results (unstructured querying of database contents).
* **MATLAB** Programming – Developed programs for calculating the QR factorization of matrix problems, Household Reflectors, mathematical root finding & interpolation and finding the Cholesky & LR factorizations of numerical matrices.
* **ELK Stack** – Implemented Kibana dashboards for monitoring the ELK stack on different domains and their log files over user-inputted timespans, transferred dashboard schemas over different domains, monitored the ELK stack, and worked on fixes for a JSON file for finding ELK logs depending on the user’s current working domain. Also used a Java-based process-control tool for viewing the ELK stack’s processes and daemons.
* Database Development and Project Leadership– Involved in database design/development using **SQL**. Performed as “first up” in rotating team lead of a team to create a database of records for helping handicapped people search for accommodating devices (medical durables, therapy apps, etc) with SQL; planned and coordinated the project utilizing **Waterfall** methodology and performed analysis and design, as well as the actual programming of a previously developed security program. My phase involved developing the initial design.
* Operating Systems Experience – Experience using Windows 7/Windows 10, **Unix/Linux**, and Android operating systems.
* **Github/GitLab/Git (Linux)** - Utilized during software development and software fixes with an understanding on baseline concepts. Performed cloning, branching, pulling, and pushing when working on discrepancy/incident reports, and code reviews. Also performed symbolic linking to repository resources within a local build area, created API keys/certs, and created different script-file commands for performing other general duties (.cshrc).

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| Work Experience |

**Software Test Engineer** – TekSystems – Aurora/Denver, CO – January 2025 to Present

* Conducting manual tests to evaluate software functionality, usability, and reliability.
* Executing test cases to ensure the Application meets customer processes and steps.
* Identifying and documenting defects using the Beans Service Integrator’s Salesforce system.
* Collaborating with the customer project team to understand system functionality and user needs.

**Software Engineer Associate** –Lockheed Martin –Aurora/ Littleton, CO – December 2020 to May 2024

* Performed fixes on software programs/scripts used in the workplace; created software program/scripts and GUIs.
* Worked on discrepancy and incident reports as well as code reviews using Bugzilla and GitLab.
* Monitored the ELK stack and its current activities.
* Performed unit testing in C++.

**Front End Developer/Web Penetration Tester (contractor)** –ACED Intervention –Denver, CO – April 2018 to December 2020.

* Worked on front-end development of the FBA page’s graphs and design for the app using Angular JS, HTML, and JavaScript.
* Practiced application of Udemy penetration testing techniques on external web/mobile applications using Kali **Linux**.

**Student Trainee (Engineering)** – First Responder Network Authority (FIRSTNET) – US Dept of Commerce (internship), June 2017 to September 2017

* Research & Development (R&D) of public safety focused applications to assist first responders (using Android platform).
* Developed an Android App prototype to provide first responders with a ‘Memo’ function to capture notes on events, conditions, etc.; a ‘Roster’ function to display the names of all First Responders in the vicinity; a ‘Situational Awareness’ function to provide the location of the First Responder’s PED and the locations of the other First Responders (using Google Maps) and a ‘Camera’ function to capture video/snapshots to record events.

**IT Department Assistant,** Goodwill Industries (temporary position) – Denver, CO – December 2016 to March 2017

* Work involved installing operating systems, video tele-conferencing applications, and internet connectivity software (browsers, anti-virus software, and various business applications) on company computers.

**Physics Lab Assistant**,Metro State University – January 2014 to March 2016

* Work included a project developing a hard/soft interface using an **Arduino** platform (microcontroller and computer) to scan RFID chips.