

Aaron Muganda

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Profile

- 4th-year student in the Software Engineering program at the University of Ottawa
- Experience with programming languages C, C++, Python, Java, and Kotlin
- Experience with development environments Eclipse, Android Studio, Visual Studio Code, Xcode, and IntelliJ IDEA
- Experience in developing Android applications in Java using Android Studio and IntelliJ IDEA
- Front-end development experience with Bootstrap, React.js, Angular, and Vue.js
- Back-end development experience with Java, Kotlin, Spring Boot, and Node.js
- Web development experience with HTML, CSS, JavaScript, and TypeScript
- Experience in integrating RESTful APIs with GraphQL
- Experience with databases SQL, MySQL, and NoSQL
- Experience with Docker, Insomnia, and Postman
- Experience in test automation and continuous integration (CI/CD)
- Experience in UX/UI design
- Data analysis experience using Python, SQL, and Power BI
- Data visualization experience with Power BI
- Workflow automation experience with Power Automate
- Low-code/no-code development experience with Power Apps
- BI development experience with Microsoft Power Platform
- Experience with Agile development approaches
- Experience with methodologies such as Scrum, Kanban, Scrumban, Lean, and DevOps
- Experience with tools like Jira, Wrike, Asana, and Confluence

Education

Bachelor of Applied Science in Software Engineering, option in Management and Entrepreneurship in Engineering (COOP)

University of Ottawa, Ottawa, Ontario

September 2021 – Present

- Expected graduation date : December 2025
- Number of credits earned: 114 / 129

Experience

Data Analyst

Intact, Montreal, Quebec

January 2024 – April 2024

- Imported and formatted data from various sources and databases
- Developed data visualizations
- Set up monthly reporting with process automation
- Maintained and analyzed performance metrics and reports to support data-driven decision-making

BI Analyst / Developer

Kruger Products, Gatineau, Quebec

September 2023 – December 2023

- Automated and computerized a management system for the reception of vital products, cartons, and paper rolls
- Developed various software applications to meet internal client needs
- Created performance tracking tools and automated process execution
- Developed electronic inspection tools for the factory
- Developed effective communication tools
- Provided support for large-scale project deployment aimed at continuous process improvement in logistics
- Assisted in solving technical computer problems

BI Analyst / Developer

Bombardier Aerospace, Montreal, Quebec

January 2023 – April 2023

- Improved existing data reports
- Participated in the development of factory performance tools by creating applications
- Analyzed data, data models, databases, data flows, and reports
- Built performance indicators
- Managed the creation and importation of data, data models, databases, and data flows
- Managed and planned BI projects with stakeholders from development projects
- Designed tools for performance monitoring and optimization
- Interacted with internal clients and their stakeholders

Projects

Mealer App | Java, Firebase, Android Studio, GitHub

- Configured the Android Studio project with Firebase
- Implemented meal discovery features by displaying data retrieved from Firebase
- Added validations to handle division by zero and return an appropriate response in case of errors
- Added an ordering system allowing users to select and order meals
- Tested the application to validate its functionalities

Web Services Data Rest | Kotlin, Spring Boot, Angular, HTML, CSS, JavaScript, TypeScript, MySQL, VS Code, Postman, GitHub

- Configured a Spring Boot project with Spring HATEOAS, Spring Data JPA, MySQL, and SpringDoc for OpenAPI
- Created the Author entity and its relationships
- Implemented repositories for CRUD operations on entities
- Developed a REST controller to handle CRUD operations for books and authors
- Added hyperlinks in API responses using HATEOAS
- Configured the HttpClient module to communicate with the REST API
- Created an Angular service to manage API calls (add, retrieve, update books and authors)
- Added an "Authors" menu option to the navigation bar
- Created a form to search for an author by ID and display their information
- Implemented features to associate authors with books

Web Services GraphQL | Kotlin, Spring Boot, Angular, HTML, CSS, TypeScript, NoSQL, MongoDB, VS Code, Postman, GitHub

- Added a GraphQL schema (employee.graphqls) with queries and mutations to manage employees
- Implemented resolvers (EmployeesResolver) to handle server-side GraphQL queries and mutations
- Configured MongoDB to store data and validate the server using GraphiQL
- Updated the Angular service to interact with the GraphQL API (queries and mutations)
- Tested and validated the communication between the GraphQL server and the Angular application
- Modified the employee data entry form to consume the API mutations
- Integrated Apollo Angular to manage queries and mutations with the GraphQL server

Web Services RESTful | Kotlin, Spring Boot, VS Code, Postman, GitHub

- Created a Spring Boot project using Spring Initializr, adding the Spring Web dependency
- Implemented a REST controller with GET endpoints
- Added validations to handle division by zero and return appropriate responses in case of errors
- Integrated SpringDoc to automatically generate the OpenAPI documentation for the API
- Tested the endpoints using Postman

Console Based Card Game | C++, Visual Studio, VS Code, GitHub

- Created the main classes for the game (Card, Deck, DiscardPile, Hand, Chain, TradeArea, Player, Table, CardFactory)
- Handled exceptions for illegal types (IllegalType) and insufficient funds (NotEnoughCoins)
- Implemented the game logic in a main loop, following the provided pseudo-code
- Implemented a save and load feature to allow pausing and resuming the game state

Power BI Dashboards | Power BI, Python, Excel, VS Code, Github

- Generated data files in CSV format using Python scripts for analysis
- Extracted, transformed, and loaded data from various sources using Python
- Imported the prepared CSV data into Power BI for advanced modeling and visualization
- Created interactive dashboards in Power BI
- Analyzed, developed, and visualized data
- Enabled interactive exploration and insight generation through dynamic dashboards

Skills

Technical Skills

- Operating Systems : MS-DOS, Windows, and Mac OS
- Programming Languages : C, C++, Python, Java, Kotlin, HTML, CSS, JavaScript, and TypeScript
- Databases : Firebase, MongoDB, PostgreSQL, SQL, MySQL, and NoSQL
- Libraries & Frameworks: Bootstrap, React.js, Vue.js, Node.js, Angular, and Spring Boot
- Protocols : HTTP / HTTPS
- Development Environments : IDLE, CodeBlocks, Eclipse, Android Studio, Visual Studio Code, Xcode, and IntelliJ IDEA
- Others : Docker, GraphQL, Insomnia, and Postman
- Microsoft Office 365
- Google Workspace
- Project Management Tools : Wrike, Asana, and Jira
- Version Control and Source Code Management : Git and GitHub
- Collaborative Work and Documentation : Confluence and Stream
- Prototyping : Canva, Miro, and Figma

Communication

- Mastery of writing practices specific to scientific and technical fields
- Proficiency in delivering oral presentations and drafting technical reports
- Ability to write clear, detailed, and comprehensive technical documentation
- Oral presentations and stakeholder management

Software Development

- Mastery of software engineering principles: requirements, decomposition, design, development, documentation, testing, debugging, and deployment
- Gathering, specification, and validation of requirements
- Advanced software design and development using design patterns and development frameworks
- Quality specification (performance, usability, portability, accessibility, maintainability, adaptability, reliability, responsiveness, robustness, security)
- Use of UML for analysis and design
- Use of modeling tools for model-driven construction
- Application of software architecture principles (design patterns, layers, middleware)
- Analysis and design of distributed systems using middleware
- Design of distributed systems with middleware
- Transaction management and performance in distributed systems
- Process management and interprocess communication
- Design of efficient algorithms
- Quality assurance, testing, validation, and verification
- Code inspection and review
- Process quality standards
- Error management and unit testing
- Mastery of source code management and version control

Front-End Development

- Design of user-centered user interfaces (UI)
- Use of graphic design tools
- Prototyping and usability evaluation
- Management of colors, icons, and graphic elements
- Web accessibility and standards
- Responsive design and integration

Back-End Development

- Design of client-server systems
- Design of scalable microservices architectures
- Application performance optimization
- Unit testing and automation
- Use of RESTful APIs
- Database management
- Security and authentication