Ali El Achkar

(613)371-4727   elachkarali0@gmail.com   https://alielachkar.github.io/   LinkedIn

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WORK HISTORY

Intermediate Client-Side Developer
Vectorface, Ottawa ON

Oct 2023 – Present

- Spearheaded the development of innovative features in social gaming and slot games, contributing to the enhancement of user experiences.
- Addressed software issues promptly by applying effective bug fixes, ensuring the seamless functioning of gaming applications.
- Played a role in crafting a cutting-edge game engine tailored for casino games, showcasing a commitment to technological advancement and industry-leading solutions.
- Expanded the functionality of the PHP backend for the casino, introducing new features to elevate the platform's performance and features.
- Orchestrated the smooth transition from Node 16 to Node 18, managing and facilitating the update of framework versions to ensure optimal system compatibility and performance.
- Worked on the transition from JavaScript with Flow for static types to TypeScript, enhancing codebase robustness and maintainability.
- Drove the migration from React with Redux to Zustand for app state management, optimizing the efficiency of the application's architecture.
- Assembled captivating games utilizing the developed game engine and integrated game design tools, contributing to a diverse and engaging gaming portfolio.
- Implemented comprehensive documentation for processes and products using tools such as Joplin and GitLab, fostering clarity and knowledge sharing within the development team.

Tools used: React, TypeScript, JavaScript, MySQL, MariaDB, Docker, GitLab, PHP, Express.js, Node.js, Postman, Cypress, Mocha, Jest.

Intermediate Software Developer
University of Ottawa, Department of Family Medicine, Ottawa ON

Nov 2021– Apr 2023

- Led the development of 6 Node and React based web applications that provided learning modules, seamlessly integrating them with a centralized platform and designing their microservice architecture.
- Managed the development of 3 VR applications, delivering immersive training experience for residents.
- Worked on bootstrapping and designing .NET Core resident management system with MSSQL.
- Utilized Docker to create optimized images for application deployment, ensuring efficient packaging and deployment.
- Implemented CI/CD using GitLab and GitHub Actions to automate the build, test, and deployment processes for multiple projects.
- Integrated CI/CD workflows with AWS and Azure cloud platforms, leveraging serverless services.
- Provisioned virtual servers to run the applications with EC2 Linux, while leveraging IAM for access management.
- Implemented CloudWatch for monitoring the applications' performance, ensuring optimal and timely issue detection.
- Introduced and implemented agile processes to bring structure to the development of the Innovation Portal apps.
- Designed the schema for the Innovation Portal's Microsoft SQL Server database, ensuring efficient data storage and retrieval.
- Implemented the database using Amazon RDS, optimizing performance, scalability, and data security.
- Developed and maintained a RESTful API that seamlessly communicates with an MSSQL database, ensuring efficient data management and retrieval.
- Successfully integrated Auth0 services into the microservices architecture, ensuring secure user authentication and authorization.
- Implemented Google Sign-On and Azure AD with Auth0, allowing users to sign in using their Google credentials, and enabling seamless authentication and single sign-on (SSO) for users.
- Mentored and oversaw a team of 15-20 interns, ensuring effective coordination and successful project execution.

Tools used: AWS, Azure, Docker, Node.js, Express.js, Cypress, Bootstrap, Postman, Selenium, MUI, SASS, SQL Server 2019, Auth0, React.js, React Native, Next.js, .NET Core 2.1, .NET 6.0, GitLab, GitHub, Artifacts, Confluence, Jira, Firebase, Unity VR, Meta Quest 2.

IT assistant and Webmaster
University of Ottawa, Faculty of Law, Common Law section, Ottawa ON

May 2019 – Nov 2021

- Managed and facilitated the update and maintenance of the faculty's IT system, ensuring smooth operation.
- Provided comprehensive IT support to faculty personnel and professors, troubleshooting hardware and software issues, and resolving technical problems promptly.
- Employed tools listed below to enhance the functionality and design of the faculty website.
- Utilized Kace to efficiently manage and maintain all faculty devices, ensuring they were up to date and functioning properly.
- Employed tools such as Drupal, SQL, HTML, CSS, and JavaScript to enhance the functionality and design of the faculty website.
- Assisted in coordinating and executing faculty events, contributing to successful event planning and seamless technical support.
- Worked closely with faculty members to understand their IT needs and provided customized solutions to enhance their productivity.
- Updated and maintained the faculty website, ensuring accurate and timely information was reflected across all pages.

Tools used: Drupal, SQL, Kace, HTML, CSS, Javascript, Campaigner, Adobe Lightroom, Sony Vegas Pro, Office 365.

Product Development, Frontend Developer
Mitel Networks, Ottawa ON

May 2021 – Aug 2021

- Collaborated with development teams, working with both Angular and React apps to create new components.
- Successfully migrated the testing framework from Protractor to Cypress testing efficiency and reliability.
- Designed end-to-end (E2E) and unit tests for Angular components, ensuring code integrity and preventing regressions.
- Utilized JavaScript, TypeScript, HTML, and SCSS to develop high-quality front-end solutions that met project requirements.
- Actively participated in code reviews, providing feedback to ensure code quality and maintain best coding practices.

Tools used: Ionic, JavaScript, TypeScript, HTML, SASS, Postman, Selenium, Jest, StencilJS, Storybook, React, Angular, Cypress, GitHub.

Software Tester
BlackBerry, Ottawa ON

Sep 2020 – Dec 2020

- Actively participated in all aspects of software testing, collaborating with testers, developers, and project stakeholders.
- Designed and implemented manual test cases for BlackBerry Security Applications, ensuring comprehensive coverage and adherence to project specifications.
- Responsible for performing hands-on testing of new features to ensure product functionality is working according to specifications.
- Analyzed and reproduced complex problems within test environments based on test results and customer-reported inquiries.
- Utilized tools such as IIS (Internet Information Services) and Windows Server 2012 to create and manage testing dashboards, facilitating efficient testing processes.

Tools used: IIS, Windows Server 2012, Jira, Confluence, TestRail.

Localization QA Specialist
OpenText, Ottawa ON

Jan 2020 – Apr 2020

- Conducted Quality Assurance (QA) activities, including testing and verification of localized products to ensure accuracy and adherence to localization standards.
- Maintained documentation and generated reports for various aspects of project.
- Worked on scripting and parsing using Regex and Java, automating processes, and facilitating data manipulation.
- Utilized programming languages (Java, Python) to develop software solutions to improve productivity and enhance project outcomes.

Tools used: Java, Python, Secure Shell, Ruby, SDL Passolo

PROJECTS

Real-time systems project
- Led a team in the development of a real-time energy management system for solar panels using an Arduino-based platform.
- Utilized C++ within a Real-Time Operating System (RTOS) environment to ensure precise control and real-time responsiveness.
- Designed and implemented a comprehensive subsystem that monitored and controlled energy levels, activated or deactivated solar panels, and efficiently routed energy to designated destinations.
- Leveraged the Arduino Terminal for real-time monitoring of energy storage levels and usage statistics.
- Created extensive project documentation exceeding 200 pages, employing Doxygen to generate in-depth technical documentation.
- Successfully navigated through complex documentation and registers of the AM335x processor from Texas Instruments (TI) to configure header files and manage memory efficiently.
- Collaborated on the development of five crucial project modules, including the acquisition, ADC (Analog to Digital Converter), GPIO (General Purpose Input Output), and Cyclic Scheduler modules.
- Orchestrated the synchronization of all project modules by leading the development of the Cyclic Scheduler module.
- Demonstrated skills in low-level embedded system development within the challenging constraints of a real-time context.

Tools: C++, Arduino, AM335x processor (TI), CodeComposer Studio, Doxygen, BitBucket, Trello

CyberGlove
- Led a 12-month capstone project that culminated in the development of the CyberGlove, an innovative device designed to facilitate communication for individuals using ASL.
- Conceptualized and designed the CyberGlove to seamlessly translate ASL hand movements into spoken English, enabling ASL users to communicate effortlessly with those unfamiliar with sign language.
- Utilized an array of cutting-edge technologies and tools to bring the CyberGlove to life, demonstrating a multidisciplinary approach to engineering and problem-solving.
- Integrated ten flex sensors into the glove, employing Arduino microcontrollers to acquire precise data on hand gestures and movements. Designed and soldered a custom PCB to facilitate data transmission between the sensors and the Arduino.
- Incorporated an MPU 6050, a 3-axis gyroscope and accelerometer, to capture and analyze the hand's position and orientation, enhancing the accuracy of ASL translation.
- Established a seamless data communication pipeline using MQTT (Message Queuing Telemetry Transport) to transmit real-time sensor data from the glove to a central processing unit.
- The central processing unit, a Raspberry Pi, was equipped with a 5-inch LCD screen, speakers, and a microphone, forming the core of the translation system. Collaborated on Python-based software to interpret and translate incoming sensor data into coherent text.
- Integrated a text-to-speech API to enable the CyberGlove to audibly recite the translated messages, fostering effective communication between ASL users and non-signers.
- Implemented a microphone and leveraged a speech-to-text API to allow non-signing users to respond vocally, with their speech instantly converted to text on the same LCD screen.

Tools: Arduino, Raspberry Pi, MPU 6050, MQTT, Python, PCB Wiring, GCP Speech-to-Text API, GCP Text-to-Speech, GitHub.

CLI Banking System Project
- Designed and implemented a command-line interface (CLI) banking system using C++ to manage financial transactions for multiple accounts.
- Developed a robust application that allowed users to perform a variety of banking operations, including account creation, deposits, withdrawals, and balance inquiries.
- Utilized C++ features such as classes, pointers, and dynamic memory allocation to efficiently manage account data and transactions.
- Implemented a secure and error-handling mechanism to validate user inputs, ensuring data integrity and the prevention of unauthorized actions.
- Employed pointers to navigate and manipulate account data, facilitating the creation, updating, and retrieval of account information.
- Demonstrated strong problem-solving skills by addressing complex transaction scenarios and edge cases, ensuring the reliability of the banking system.

Tools: C++, Command-Line Interface (CLI), Pointers, Dynamic Memory Allocation

ServiceProvo – Client-Service Provider Android App
- Designed and developed a feature-rich Android application using Java to bridge the gap between clients and service providers, facilitating seamless connections for services like plumbing and gardening.
- Leveraged Android Studio, Java, and XML to create an intuitive and visually appealing user interface, enhancing the overall user experience.
- Integrated Firebase for real-time data synchronization and user authentication, ensuring secure and efficient data management.
- Employed NoSQL databases to efficiently store and retrieve user and service-related information, contributing to the app's scalability.
- Utilized GitHub for version control and collaborative development, promoting effective teamwork and project management.
- ServiceProvo represents a successful application of mobile app development, showcasing skills in Java, Android development, and database integration.

Tools: Android Studio, Java, XML, Firebase, NoSQL, GitHub

MeFIT Leaderboard – Dynamic Athlete Leaderboard App
- Developed a dynamic leaderboard application that efficiently manages athlete rankings in various competitions, offering customizable ranking methods and enhanced competition monitoring.
- Utilized PostgreSQL for robust and efficient data storage, ensuring accurate tracking of athlete performance and competition results.
- Employed a combination of JavaScript, XML, HTML, and CSS to create an interactive and visually engaging web-based leaderboard platform.
- Demonstrated proficiency in front-end and back-end development by creating a user-friendly interface while efficiently processing and presenting data.
- Utilized Heroku for seamless deployment, making the application accessible to users online and ensuring scalability.
- The MeFIT Leaderboard project showcases skills in web development, database management, and the creation of dynamic and engaging user interfaces.
- Collaborated with team members using GitHub for version control, ensuring smooth development workflows and effective project management.

Tools: PostgreSQL, Javascript, XML, HTML, CSS, GitHub, Heroku

EDUCATION

University of Ottawa   2017 –2021
Ottawa, School of Electrical Engineering and Computer Science
- Bachelor of Applied Science in Computer Engineering, Cum Laude

EXTRAS

- Fluent in French, English, And Arabic
- EIT with 30 months of experience (passed the NPPE Exam).
- Reliability clearance holder.

REFERENCES

Available upon request.