Zakaria EL KHAYARI

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EDUCATION

Master in Computer Science, with concentrations in Software Engineering and E-Services | University of Lille | Lille, France | 2024

EXPERIENCE

FullStack Developer | Just Simple Solutions (J2S) | Lille, France | May 2022 - September 2024

- Built dynamic, modular front-end interfaces using **Backbone.js**, a component-based and event-based framework similar to **React.** Enhanced interactivity with **jQuery**, simplified complex logic with **Underscore.js**, and used **LESS** to maintain scalable and modular CSS stylesheets. Contributed to internal tools and applications using **Angular**. Optimized front-end workflows with **Gulp**, automating tasks like CSS compilation (**gulp-less**), JavaScript minification (**gulp-terser**), and HTML compression (**gulp-htmlmin**).
- Developed **APIs** and back-end systems using **PHP** to handle data processing, user management, and system configuration. Managed databases with **MongoDB** and **SQLite**.
- Built a **real-time push notification system** using **WebSockets** in **Node.js** to enable instant updates for users across applications. Designed and implemented a utility to handle **background tasks** (e.g., scheduled operations, data synchronization). Built a custom **FTP utility** to synchronize databases and backups across multiple server instances.
- Handled **XML** for structured data exchanges between systems. Automated complex publishing workflows by scripting **JSX files** for **Adobe InDesign Server**.
- Configured and maintained **Apache2** servers and managed **Azure Virtual Machines** to host and deploy applications. Used **GitHub** for version control and automated CI/CD pipelines with **Jenkins.**
- Collaborated in an **Agile Scrum** environment, managing tasks and project workflows through **Jira** and **Confluence**, conducting sprint planning, retrospectives, and daily stand-ups.

Web Developer Intern | Mumatic | Mons-en-Barœul, France | March 2019 - May 2019

- Developed user-facing components for internal applications using **JavaScript**, **CSS**, **HTML**, and **Bootstrap**.
- Contributed to **Node.js** backend development, assisting with small feature implementations and tweaks.
- Used **Cisco Packet Tracer** to design and simulate network changes, ensuring smooth configuration and troubleshooting before implementation. Configured and maintained **local virtual machines** using **VirtualBox** for development instances. Gained hands-on experience in network topologies, configurations, and troubleshooting in a virtual environment.

PROJECTS

Typex – Typing Game | Personal project | November 2024 - Present

- **Typex** is an educational typing game designed to help users improve typing speed and accuracy, similar to Microsoft's **Tux Typing**. The game tracks users' typing performance by measuring **WPM (Words per Minute)** and **accuracy**, providing a global leaderboard.
- Technologies : **Phaser3, Angular, TailwindCSS, Java Spring, PostgreSQL and Keycloak.**

Impact of System Calls on Microservices-based Architectures | Master's Thesis at Univesity of Lille | September 2023 - June 2024

- Conducted in-depth research on the impact of system calls on the resilience of containerized environments, focusing on microservices architectures deployed using **Docker** and **Kubernetes**.
- Applied **Chaos Engineering** techniques to test system robustness, using tools like **ChaosOrca** to inject controlled failures and analyze system behavior under stress. Analyzed and classified system call failures (e.g., permission errors, file not found, I/O errors) to identify critical vulnerabilities in containerized applications. Used **eBPF** (Extended Berkeley Packet Filter) for granular monitoring of system calls, enabling real-time observability and performance optimization. Evaluated strategies to reduce unnecessary system calls, improving application resilience and minimizing service interruptions.
- Technologies : **Docker**, **Kubernetes**, **eBPF**, **Chaos Engineering**, **ChaosOrca**, **Linux system calls**, **Python**, **Bash scripting**.

Studadvice – Administrative Assistant App for Students | School Project | October 2023 - January 2024

- **Studadvice** is an app designed to help students navigate administrative tasks like passport renewal, financial aid applications, obtaining a driver's license, etc. The app provides a detailed roadmap, required documents, and steps for each task.
- Collaborated with 3 team members to the development of a **multi-platform** app using **Flutter** to ensure availability on mobile devices. Integrated **Firebase** for user authentication.
- Designed and developed an **admin panel** using **Angular** with **Java Spring Boot** and **MongoDB** to update and manage task-related data.

SKILLS

Coding & Frameworks : **JavaScript / Typescipt, React**, **Angular**, **jQuery**, **Backbone.js**, **Flutter**, **HTML5**, **CSS3**, **TailwindCSS**, **LESS**, **Bootstrap, Java, PHP, Python.**

Back-end & Tools : **Microservices, Docker, Node.js, Spring Boot, PostgreSQL, SQLite, MongoDB, Git, Jenkins, Apache2, Nginx, Microsoft Azure, AWS.**

Languages : **Spanish** (Native), **French** (Fluent), **English** (Fluent).