**KACEM BOUFELLIGA**406-609-7143 | [Kacem@zeroxcc.com](mailto:Kacem@zeroxcc.com) | Bozeman, MT

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| **Summary of Qualifications** |  |  | **Technical Skills** |
| Creative and pragmatic software leader with a strong track record of delivering high-impact solutions across complex domains. Experienced in leading full product lifecycles, aligning engineering execution with business strategy, and solving operational challenges through platform design, automation, and intelligent systems.  Recognized for driving transformation in mission-critical environments—from modernizing compliance systems to enabling real-time simulation and automation at scale. Adept at engaging with stakeholders across disciplines and delivering clear results in dynamic, fast-moving contexts.  Proven ability to balance innovation with execution, architecting systems that scale, adapt, and generate measurable value. Equally effective in guiding teams, mentoring engineers, and fostering collaboration across geographically distributed organizations. |  |  | * **Programming** Java, Clojure, Python, TypeScript, JavaScript, HTML, CSS, Nodejs, Shell scripts, MS SQL, Oracle, PostgreSql, MySQL, MongoDB, Snowflake, MuleSoft, Databricks/Spark, Hibernate, Ibatis, JOOQ, SwiftUI, ReactJS, Vaadin, MQTT, AMQP, XMPP, KAFKA, PULSAR, REDIS, RABBITMQ, Spring Boot, Elastic Search * **Software Tools** Docker, Kubernetes, TravisCI, Gitlab Pipeline, Terraform, Helms, Git, Gitlab, Perforce, Svn, Maven * **Hardware** Raspberry Pi, NVIDIA Jetson, Odroid, UDOO x86, Arduino, IBM 308x-309x series mainframes running MVS (TSO Shell), DOS/VSE , IBM x.86 PCs/Servers running Windows and Linux * **Languages** Native in English and French |

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* Enabled full privacy compliance for all T-Mobile customers by architecting and delivering an automated platform to onboard hundreds of internal systems, reducing regulatory risk and accelerating onboarding by 10×.
* Delivered edge-connected platforms supporting real-time sensor data ingestion and AI-based alerting for fraud detection, geofencing violations, and live telemetry monitoring in banking and telecom environments**.**
* Designed and deployed AI solutions to automate document recognition and facial verification for government-issued IDs, streamlining KYC and customer onboarding workflows at scale**.**
* Led the development of high-accuracy enterprise platforms including a deep learning-based check processing system with 99.3% accuracy, demonstrating leadership in applied AI and scalable automation**.**

# **Professional Experience**

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**Exadel (formerly Coppei)** 04.2021 – Present

**Solutions Architect & Principal Software Engineer   
*Tech Stack:****Java (Spring Boot, Spring Cloud, Spring Security, Spring Data), Python, C++, React, Vaadin, Apache Kafka, Apache Pulsar, RabbitMQ, MuleSoft, Apache Camel, Kubernetes, Redis, Elasticsearch, MySQL, PostgreSQL, Oracle, Databricks, Splunk, Unreal Engine, AirSim, PX4, QGroundControl, Cesium for Unreal, CesiumJS, YOLO, Detectree2 / DeepForest, Linux, QGIS, SNMP, Telegraf, Prometheus, Grafana, and Logstash*

**US Air Force - Real-Time Autonomous Combat Simulation (MVP Phase I)**

* Architected and delivered a real-time 3D flight mission simulation MVP for joint Air Force/Navy operations, featuring F-35 and F/A-18 squadrons, aerial refueling, and radar engagement scenarios.
* Engineered the simulation using **Unreal Engine 5.5** (Blueprints and custom C++ plugins), extending and integrating the open-source **AirSim** plugin (from GitHub) to support PX4/QGroundControl-based autonomous flight path planning and multi-vehicle coordination (blue/red teams).
* Built a **custom Unreal C++ plugin** to enable seamless inter-process communication between Unreal and an embedded Chromium HTTP server, facilitating real-time data exchange with a **React** web app for synchronized 2D/3D mission planning and visualization.
* Utilized **Blender** for 3D asset refinement and optimization, ensuring high-fidelity models for simulation and visualization.
* Integrated **YOLO-based computer vision** to simulate AI-driven object detection and adversarial course-of-action generation under contingency conditions.
* Deployed and managed the simulation environment on **Linux servers**, orchestrating PX4, QGroundControl, and AirSim for autonomous piloting, telemetry, and scenario scripting.
* Implemented performance profiling and benchmarking for the full simulation stack; developed CI/CD workflows for packaging, testing, and deploying Unreal builds to staging and production servers.
* Delivered a modular architecture supporting rapid iteration, extensibility, and early stakeholder validation, directly contributing to the project’s greenlight for Phase II.

**Microsoft - Global Data Center Division: Supply Chain Visualization Platform**

* Designed and implemented a real-time visualization platform to track global server shipments from vendor warehouses to destination data centers, including handoffs at integrator hubs, maritime lanes, air, rail, and ground transportation. Built immersive 3D visualizations in Unreal Engine with Cesium for Unreal, enabling users to follow each asset’s journey down to rack-level placement in the data center**.**
* Developed both 2D React-based maps and 3D Unreal experiences, allowing users to select a data center and view in-transit orders, live disruptions, and alternate routing options. Engineered a custom C++ Unreal plugin to embed and synchronize the React UI within Unreal, while importing detailed CAD layouts for facility-level navigation.

**T-Mobile - Privacy Compliance Platform (CCPA Initiative)**

* Owned and led the end-to-end architecture, implementation, and delivery of a fully automated, agent-based integration platform enabling CCPA-compliant onboarding of T-Mobile internal systems.
* Implemented a **containerized microservices architecture** using **Java/Spring Boot** deployed on **Kubernetes**, with **Docker** containerization and **HashiCorp** tools for secrets management and service discovery.
* Engineered a **rule-based automata system** to handle multiple identification types across integrated systems, with dynamic routing and transformation capabilities.
* Integrated **Apache Kafka** for scalable, asynchronous message handling-agents consumed and dispatched customer requests to the appropriate backend systems.
* Developed an **automated metadata generation pipeline** that consumed data privacy tags from **Collibra** (data governance repository) to enforce field-level security controls dynamically.
* Integrated with **Apigee API Management** for authorization, implementing field-level **data encryption** and masking using **Bouncy Castle** cryptographic libraries based on configurable security rules.
* Built resilient service registration using **Apache ZooKeeper**, with health monitoring via **Kubernetes Probes** and **Spring Boot Actuator** endpoints.
* Implemented comprehensive observability using **Splunk** for centralized logging and **Prometheus** for metrics collection and alerting.
* Established robust CI/CD practices with **GitLab CI pipelines**, integrating **SonarQube** for code quality analysis and automated **SAST security scanning** for vulnerability detection.
* Applied **Spring Security** for authentication and authorization, and **Spring Data** for efficient data access patterns across the platform.
* Enabled scalable onboarding from fewer than 2 to 20 systems per month, reducing costs by millions of dollars annually, meeting the legal department’s compliance targets, and positioning the team for sustained high-volume onboarding.

**Neuron Edge Technologies LLC** 12.2019 – 04.2021

**AI for Embedded & Edge Devices - Principal Architect**

* Led the design and deployment of AI solutions for edge hardware across banking and telecom sectors. Delivered real-time ID verification by extracting facial data from government ID scanners and matching it via embedded camera streams using computer vision and deep learning.
* Architected data collection and telemetry pipelines from embedded devices to cloud monitoring systems, enabling fraud and perimeter breach detection. Oversaw end-to-end technical delivery, including environment setup, CI/CD automation, and partner integrations with banks and telcos.

**Speckeye Technology** 06.2012 – 10.2019

**AI & Enterprise Automation for Banking and Telecom - Principal Architect**

* Led architecture and development across multiple enterprise platforms used by banks and telecom providers. Delivered an AI-powered check processing system achieving **99.3% accuracy** in handwritten courtesy amount recognition, handling up to **400,000 checks/day**. Designed the full deep learning pipeline, from image normalization and digit segmentation to CNN modeling and high-performance C++ deployment using gRPC.
* Engineered a dynamic foreign exchange platform supporting options and futures trading, processing over **€2B annually** with real-time pricing based on the **Black-Scholes model**. Migrated legacy frontends to Angular for responsive UI and integrated trading workflows.
* Built an automated contract validation platform for telecom operators, capable of validating over **100,000 contracts/day**using a microservice-based agent architecture. System generated daily compliance and financial reports, significantly improving scalability and audit readiness.

**Fedaso || Orone Group** 04.2010 – 05.2012

**Multi-Sector Enterprise Software Delivery - Principal Architect**

* Directed distributed R&D and engineering teams across Europe and North Africa to deliver enterprise-grade software solutions for clients in finance, insurance, retail, and government. Led product road mapping, technology selection, and full-cycle delivery across multiple platforms.
* Modernized legacy platforms by introducing REST-based microservices, decoupling business logic from the database layer, and implementing Agile/Scrum across geographically dispersed teams. Upgraded EBP’s public tender system by refactoring to an MVC architecture and building a scalable notification engine for automated B2B tender matching.
* Improved scalability and maintainability by shifting from stored procedures to a cache-enabled business logic layer, reducing platform load and accelerating response times for high-volume transactions.

# **Education**

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**University of Michigan** B.S. Mathematics, Minor Computer Science