John Mulder *Senior Software Engineer*

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Senior Software Engineer with deep expertise in modern front-end frameworks including React.js, Angular, and Vue.js, and robust backend development using Node.js, Express.js, and microservices architecture. Proficient in designing, scaling, and optimizing relational and non-relational databases such as MySQL, PostgreSQL, MongoDB, Oracle, and MSSQL, alongside advanced experience with modern data solutions like GraphQL, Redis, Neo4j, Snowflake, Clickhouse, Firebase, and DynamoDB. Demonstrated success in leading high-impact projects that improved user engagement, performance, and conversion rates across complex eCommerce ecosystems, with extensive experience developing secure, scalable healthcare applications that integrate structured and unstructured clinical data into AI-driven workflows to enhance patient outcomes and operational efficiency. Skilled in architecting full-stack applications with scalable frontend interfaces and real-time backend infrastructures. Proven ability to lead agile development teams, implement CI/CD pipelines, optimize DevOps workflows, and integrate AI/ML models and blockchain-based solutions for enterprise-grade applications.
Strong advocate for clean architecture, modular component design, and high code quality, with a passion for building intuitive user experiences. Eager to use deep frontend engineering knowledge to deliver innovative, performant, and secure applications as a Frontend Software Engineer.

EDUCATION

Bachelor's Degree in Computer Science 08/2010 – 05/2014
Temple University Philadelphia, PA, United States

SKILLS

Programming Languages
JavaScript, TypeScript, Python, PySpark, Golang, Ruby, PHP, Java, Kotlin, Android Studio, .Net, C#, SQL, NoSQL, Solidity, Scala, Elixir, Rust, COBOL.

Backend Development
Node.js, Ruby on Rails, Laravel, .NET Core, Golang, Java/Kotlin (Spring Boot), Scala, CICS, IMS, JCL.

Cloud Platforms & Services:
AWS (Lambda, S3, ElastiCache, API Gateway, DynamoDB, SQS, SNS, Lambda, S3, EC2, RDS, AWS CDK), Azure (DevOps, Azure Functions, App Service), Google Cloud Platform (GCP), DigitalOcean, Supabase, Vercel, Oracle, Kafka, Zookeeper, Power BI

eCommerce & CMS
Shopify, WordPress, Drupal, Magento, WooCommerce.

AI & API Integration & Architecture
TensorFlow, Keras, Scikit-learn, Pandas, NumPy, LLMs, NLP, Computer Vision, ETL Pipelines, Data Warehousing, Machine Learning, REST APIs, GraphQL, OpenAPI, gRPC, Stripe API, Snowflake, Kafka, Spark, Databricks

Testing & Build Tools
Mocha, Jasmine, Jest, Cucumber, Cypress, JUnit, xUnit, TestNG, Playwright, Puppeteer, Webpack, Grunt, Gulp, Nx, PyTest

Frontend Development
React.js, Next.js, Vue.js, Angular, Svelte, Blazor, HTML5, CSS3, SCSS, Tailwind CSS, Webpack, Babel, Vite.

Databases
MySQL, MongoDB, PostgreSQL, GraphQL, MSSQL, MariaDB, ELK Stack (Elasticsearch, Logstash, Kibana), Oracle, Snowflake, Cassandra, Neo4j, Redis, Clickhouse, Firebase, Supabase, DynamoDB, DB2, IDMS

DevOps & CI/CD:
Docker, Kubernetes, Jenkins, Terraform, AWS CDK, GitHub Actions, GitLab CI, Bitbucket Pipelines, NGINX, Harness, ANT, Pulumi, Serverless Framework

Blockchain & Web3
Smart Contracts, NFT Development, DeFi, IPFS, gRPC, Polygon, Uniswap, SushiSwap

Performance Optimization & Security
SQL Query Optimization, API Security, Performance Tuning, Load Testing.

Other Technologies & Tools
npm, Temporal.io , Temporal Platform, Elasticsearch, OpenSearch, Payment Gateways, RESTful & GraphQL APIs, Microservices Architecture, Palantir Foundry.

PROFESSIONAL EXPERIENCE

Senior Software Engineer 01/2022 – 05/2025

Liberty Mutual Baltimore, MD, United States

- Created a scalable, performance-driven eCommerce SaaS solutions using React, ensuring high availability and seamless integration of eCommerce functionalities for global clients.
- Developed and customized Shopify themes, apps, and checkout flows, boosting conversion rates by 25% and reducing cart abandonment by 15%.
- Spearheaded the development of responsive, high-performance eCommerce platforms using HTML5, enhancing user engagement and driving conversion rates through optimized front-end architecture.
- Designed and developed eCommerce platforms using TypeScript, React, and .NET, improving platform speed by 25% and scalability to support growth.
- Developed responsive eCommerce solutions with Angular 17.2 and React, reducing site load times by 30% and boosting user engagement by 20%.
- Created landing pages for special campaigns (e.g., Christmas) using JWT, Next.js, Node.js, React, Vue.js, and Angular17/19.
- Designed a multi-tenant identity platform using OAuth2, OIDC, and WebAuthn (FIDO2)
- Integrated facial and fingerprint biometric login using WebAssembly and C++-backed modules
- Built API services using Node.js + TypeScript; deployed via Docker/Kubernetes on AWS
- Transformed an Angular 16.2.14/Laravel eCommerce app to React/Ruby on Rails, boosting performance by 10% and increasing customer retention by 15%.
- Built scalable eCommerce applications using .NET, ASP.NET, Ruby on Rails, Java/Kotlin, Spring Boot, React, Svelte, JWT, Node.js, Firebase, MongoDB, NoSQL, and Express.js, increasing transaction volume by 15%.
- Developed and maintained REST and SOAP web services using Java and Spring Boot, enabling secure data exchange across healthcare and insurance platforms using JSON and XML payloads.
- Designed and validated complex XML schemas (XSD) and implemented XSLT transformations, facilitating interoperability between legacy systems and modern microservices.
- Developed dynamic, high-performance web interfaces using Svelte, resulting in a 40% reduction in bundle size and improved page load times across multiple platforms. Migrated legacy frontend codebases from React to Svelte, simplifying state management and reducing technical debt in key healthcare applications. Built reusable Svelte components for form handling, validation, and dynamic data visualization, enhancing developer productivity and UI consistency.
- Maintained both platforms using native code; Swift on iOS and Kotlin/Java on Android.
- Enhanced the stability of iOS and Android applications by adopting advanced architectural patterns, achieving substantial improvement in crash-free session rates.
- uilt robust XML processing components using XPath and JAXB, supporting dynamic rule evaluation and data transformation in high-throughput clinical data ingestion pipelines.
- Ensured HL7 and custom XML schema compliance for SOAP-based interfaces in a regulated environment, with strong focus on data validation, encryption, and auditing.
- Coordinated media ingestion, encoding, and metadata delivery to Apple TV+ and Apple Music platforms.Worked with cross-functional teams to optimize TV+ channel presence across iPhone, iPad, Apple TV, and macOS.
- Developed Python-based scripts to monitor media ingestion workflows and flag QC issues before platform push.
- Conducted competitive research and UX audits across Apple TV and Spotify, contributing to a redesigned audio experience.
- Built and maintained large portions of an Android app, including UI, domain, data, and network components. Implemented new features like onboarding flow/funnel with A/B tests, product endpoint migration, discount tiers, and internationalization.
- Developed and maintained scalable microservices using Java 17 with Spring Boot, integrating with PostgreSQL and Redis for high-performance data operations in an enterprise-grade inventory system.
- Implemented RESTful APIs using Java, Spring MVC, and Hibernate, reducing response times by 35% through optimized ORM queries and lazy-loading strategies.
- Migrated a project from legacy monolith to Java-based microservices architecture, using Docker and Kubernetes for containerization and orchestration.
- Utilized Java Concurrency API and ExecutorService to build multithreaded applications that processed over 1M transactions/day with fault-tolerant design patterns.
- Integrated Apache Kafka with Java backend services to enable real-time streaming and event-driven architecture for a fintech payment platform.
- Integrated Scala-based APIs with Cassandra and Elasticsearch, optimizing query performance through asynchronous, non-blocking access patterns.
- Created a robust data validation engine using Scala and shapeless to enforce compile-time schema constraints on incoming financial transaction streams.
- Designed and developed a suite of microservices for an e-commerce platform using Node.js and Docker, improving scalability and fault tolerance.
- Developed responsive, high-performance web applications using Blazor and .NET, using the power of C# and WebAssembly to create seamless user experiences.

- Implemented full-stack solutions with Blazor on the front-end and .NET Core, C#, Ruby on Rails on the back-end, resulting in improved development efficiency and faster deployment cycles.
- Designed and developed a robust back-end architecture and RESTful APIs using Ruby on Rails, ensuring high availability and scalability.
- Designed and implemented a RESTful API with ASP.NET, C# for seamless integration between front-end and back-end services, improving data retrieval times by 40%.
- Streamlined CI/CD workflows using Laravel Forge and Vapor, ensuring high availability, automated deployments, and cost-effective cloud resource management.
- Designed and deployed serverless Laravel applications using Vapor, optimizing cost efficiency and performance for cloud-native environments.
- Built and maintained customer portals and e-commerce extensions using Laravel and Vue.js.
- Integrated Stripe and PayPal APIs to streamline checkout and improve conversion rates.
- Developed and maintained scalable web applications using Laravel PHP, using Forge for seamless server management and Vapor for efficient serverless deployment on AWS.
- Designed and implemented RESTful APIs in PHP to reduce data synchronization time by 30%.
- Developed ETL solutions in .NET with Entity Framework and ADO.NET, improving processing speed by 35%.
- Led the migration of legacy systems to .NET Core, reducing technical debt by 50% and enhancing system reliability with microservices architecture.
- Utilized Entity Framework with .NET to optimize database queries, reducing response times by 25% for eCommerce platforms.
- Built and maintained cloud-native applications using Azure and .NET, ensuring high availability and 99.9% uptime for critical business systems.
- Implemented CI/CD pipelines with Jenkins and GitHub Actions for .NET applications, automating testing and deployment processes to improve development efficiency by 30%.
- Designed and executed A/B tests on key user flows, leading to a 15% increase in conversion rate and data-driven product improvements.
- Integrated third-party APIs with Shopify Plus stores, enabling personalized shopping experiences and multi-currency support, boosting international sales by 20%.
- Designed and implemented an event-driven microservices architecture using Kafka for real-time data streaming and processing.
- Built scalable and resilient applications using CRDB and Cassandra, optimizing distributed database performance.
- Developed GraphQL APIs to enhance data retrieval efficiency and reduce over-fetching in client applications.
- Optimized CI/CD pipelines, reducing deployment times by 40% through automation with Docker, Kubernetes, and Terraform.
- Collaborated with product and UX teams to deliver user-centric SaaS features on tight deadlines using agile methodologies.
- Monitored, logged, and debugged SaaS systems using tools like CloudWatch, Datadog, or Azure Monitor to ensure high availability (99.9%+ uptime).
- Ensured SaaS platform compliance with security best practices and industry standards such as SOC 2 and GDPR.
- Designed and implemented Terraform-based infrastructure as code (IaC) for automating cloud deployments, managing scalable PostgreSQL and MySQL databases, and optimizing resource provisioning.
- Migrated legacy eCommerce platforms to Shopify with minimal downtime, cutting transition-related issues by 50%.
- Designed an ETL pipeline with Azure APIM, Azure Data Factory, and Azure Functions, improving transfer efficiency by 40%.
- Migrated data from PostgreSQL to Snowflake, reducing storage costs by 20% and enhancing query performance.
- Improved product search performance by 25% with PostgreSQL, ElasticSearch, and Redis.
- Implemented search functionality using Elasticsearch/OpenSearch, increasing product search speeds by 30%.
- Developed and maintained Snowflake-based data warehouses for eCommerce applications, ensuring high availability.
- Migrated an old eCommerce application from Angular/Laravel/PHP to React/Node.js, reducing technical debt by 40% and deployment times by 50%.
- Deployed Laravel applications to AWS with Laravel Vapor, achieving 99.9% uptime and reducing infrastructure management overhead.
- Architected and deployed eCommerce applications using Docker and Kubernetes with Helm for scalability and performance.
- Supervised a team in building an eCommerce platform with PHP and Laravel 10, incorporating advanced features like multi-currency support and personalized user experiences.
- Developed high-performance data processing pipelines in C++, optimizing memory management and multithreading to handle terabyte-scale datasets efficiently in a distributed environment.
- Implemented a custom query optimizer in C++, reducing execution time by 40% for complex SQL queries in PostgreSQL and MySQL, improving data retrieval performance for real-time analytics.
- Designed AI-powered applications with Golang for backend services and Python for machine learning, ensuring seamless integration in eCommerce and healthcare.
- Developed backend microservices in Rust and Python for a data ingestion platform.
- Designed and developed full-stack web applications using Django and Vue.js, enhancing user experience and application performance by 20%.

- Architected and deployed scalable solutions on AWS, using EC2, S3, and serverless technologies.
- Developed scalable PySpark pipelines in AWS Glue to transform and normalize EMR data for reporting and AI model ingestion.
- Integrated AWS Step Functions to orchestrate multi-stage ETL workflows for claims and encounter data processing.
- Implemented CDC patterns with Glue and Redshift Spectrum to manage incremental loads from EHR sources.
- Designed HIPAA-compliant storage strategies using S3 and encryption at rest/in transit.
- Automated EMR data quality validations with Python and SQL scripts integrated into pipeline alerts.
- Created several GenAI products and solutions, including a medical next-best action agent, a vectorDB solution for the NBA program, a content generation product for writers, and a Text2SQL agent for data scientists.
- Used best practices for managing a small business offering computer vision/machine learning consulting services and custom solutions, gaining a reputation as a subject matter expert throughout the industry.
- Applied unsupervised learning techniques (K-Means, DBSCAN, Gaussian Mixture Models) to customer segmentation problems, driving targeted marketing campaigns with a 23% lift in engagement.
- Developed a recommendation system project using collaborative filtering and matrix factorization (SVD), boosting eCommerce click-through rate by 18%.
- Built and evaluated deep learning models using PyTorch for image classification tasks, deploying optimized ONNX models to edge devices with NVIDIA TensorRT.
- Collaborated with DataOps to automate data pipelines using Apache Kafka, ETL, and Snowflake, ensuring robust data ingestion and transformation for ML model consumption.
- Applied SHAP and LIME for model interpretability, ensuring regulatory compliance and stakeholder transparency for AI-driven decision-making tools.
- Excelled throughout major projects, including researching, designing, planning, and implementing deep learning solutions for semantic segmentation used in AR/VR applications, addressing emerging challenges focusing on complete client satisfaction.
- Built and led a team of AI engineers for a client and used HR acumen to increase coordination and engagement.
- Used AI in automated cryptocurrency trading (deep learning, genetic programming). Delivered a separate, detailed performance evaluation for crypto trading algorithms that provided various insights/visualizations.
- Built modular, agentic AI workflows using Semantic Kernel for document synthesis, summarization, and tool-use planning.
- Designed a scalable RAG pipeline using FAISS + LangChain to serve 300K+ daily queries across enterprise search endpoints.
- Created custom Q&A models combining OpenAI GPT-4 with domain-specific retrievers and JSON schema validation.
- Spearheaded large-scale data analysis (price/volume data for hundreds of cryptocurrencies on several exchanges) and instituted new standard operating procedures for increasing workflow.
- Designed and implemented cloud-native microservices in Golang, optimizing for low-latency and high-throughput environments.
- Utilized Temporal.io's SDK for Golang to orchestrate and track workflows, providing enhanced visibility and troubleshooting capabilities.
- Optimized the performance of Temporal workflows by tuning activity timeouts, retries, and error handling strategies to meet stringent SLA requirements in a production environment.
- Streamlined workflows using LLMs, improving code quality and facilitating complex problem-solving.
- Created real-time customer behavior analytics solutions by integrating ETL processes.
- Architected a digital asset exchange and NFT-backed marketplace for eCommerce, supporting IoT data streams and tokenized product verification.
- Developed smart contracts (Solidity) for secure transactions and digital asset ownership in gaming and eCommerce platforms.
- Implemented the microservices for a real-time multiplayer gaming platform, using Node.js and Redis to handle real-time data synchronization and matchmaking.
- Integrated UEFN into gaming-related applications, streamlining the development process for multiplayer game features and asset management.
- Developed 3D content pipelines for integrating assets into Unreal Engine, improving game development workflows and reducing asset processing time.
- Created NFT tokens for in-game asset verification on the Polygon platform, adhering to the ERC721 standard.
- Integrated decentralized exchanges like SushiSwap and Uniswap for token exchanges and decentralized payments.
- Built blockchain solutions using Ethereum, IPFS, and Node.js, enhancing security and scalability for in-game assets.
- Implemented gRPC-based APIs to streamline internal service interactions, improving data transfer efficiency by 40%.
- Migrated the legacy SOAP APIs to gRPC, enhancing system performance and reducing latency in real-time data exchange.
- Built secure, scalable communication channels using gRPC for handling high-volume requests in a cloud-based nfrastructure.
- Integrated gRPC with Kubernetes to support scalable, fault-tolerant microservices architecture for a large-scale eCommerce platform.
- Utilized gRPC for efficient cross-service communication in a microservices environment, reducing overall request processing time by 30%.
- Developed a scalable backend architecture to handle high-volume cryptocurrency transactions, ensuring system reliability and uptime.

- Collaborated with cross-functional teams to implement blockchain-based features, streamlining payment processing and reducing operational costs.
- Conducted performance tuning and optimization on blockchain data queries, achieving a 50% increase in overall system efficiency.
- Architected blockchain-based microservices for decentralized finance (DeFi) applications, enabling secure, high-throughput transactions on Ethereum with Solidity and Go.
- Wrote white papers and technical documentation on smart contracts, asset ownership, and in-game economies, supporting client understanding and adoption.
- Spearheaded cross-functional teams to deliver high-performance, scalable applications across multiple domains, including eCommerce, healthcare, and gaming.
- Mentored team members on modern development practices, ensuring alignment with project goals and timelines.
- Developed custom data workflows in Palantir, enabling clients to gain real-time insights from disparate data sources and enhance operational efficiency.

Full Stack Developer 11/2018 – 10/2021 | Bothell, WA, United States

Infuse

- Led the implementation of scalable HTML5-based web applications for eCommerce solutions, integrating real-time data and advanced UI features to deliver seamless shopping experiences across multiple devices.
- Developed dynamic Single Page Applications using React for eCommerce and SaaS platforms, improving user experience with fast load times and seamless navigation.
- Developed and deployed new features for a multi-tenant SaaS platform using Python, TypeScript, and AWS.
- Designed RESTful APIs and backend services powering key SaaS product features, improving performance and uptime.
- Delivered high-quality front-end features with TypeScript and Angular, optimizing load times and user interaction in complex dashboards.
- Collaborated closely with UX designers to translate mockups into Angular-based components with reusable TypeScript logic.
- Built modular and testable UI components in Angular, ensuring separation of concerns and consistent behavior across the app.
- Refactored legacy JavaScript front-end code to modern Angular with TypeScript, improving code clarity, safety, and scalability.
- Spearheaded the design and development of a multiplayer online game in Unreal Engine, utilizing UEFN for real-time interactions and asset management.
- Integrated 3D game assets, improving overall game performance by optimizing asset pipelines and reducing load times by 35%.
- Worked extensively with game data and player statistics, storing and processing information in Aurora for fast retrieval and seamless gameplay.
- Built a task management web app using React, AngularJS/Next.js and MongoDB for eCommerce teams, increasing team productivity by 15%.
- Built identity verification workflows using React and Node.js, integrated with OAuth2 and FIDO2.
- Developed a user interface for tracking referral discounts and commissions, enhancing eCommerce engagement and increasing conversion rates by 25%
- Built RESTful APIs with Laravel 9, integrating real-time search capabilities powered by Elasticsearch for optimized query performance.
- Designed and optimized ETL pipelines for Laravel-based applications, using Elasticsearch to enable efficient data retrieval and analytics for high-traffic environments.
- Developed and maintained scalable web applications using Laravel PHP, using its MVC architecture for clean and efficient code organization.
- Built healthcare-focused data pipelines to ingest unstructured provider notes and structured HL7/FHIR messages into a unified data lake.
- Used AWS Glue and PySpark to process millions of patient records for downstream BI dashboards.
- Created Step Function workflows to monitor, retry, and alert for ETL jobs across Glue and Lambda.
- Developed secure API integrations using Python and Ruby on Rails for provider credentialing systems.
- Implemented serverless deployments using Laravel Vapor, optimizing cost-effectiveness on AWS infrastructure.
- Managed application hosting and deployment workflows with Laravel Forge, ensuring seamless CI/CD pipelines and automated server provisioning.
- Designed custom plugins and themes for WordPress using PHP, enhancing functionality and improving conversion rates by 25%.
- Optimized PHP scripts to improve server-side processing efficiency, reducing page load times by 20% for dynamic web applications.php
- Led a team in migrating legacy PHP codebases to modern frameworks, reducing technical debt and improving maintainability by 40%.
- Created a full-stack web application for an ed-tech startup using Python/Django (backend) and Vue.js (frontend), boosting user engagement by 35%.
- Developed scalable backend services in Python, using Flask and Django to build RESTful APIs and microservices.
- Built scalable, secure APIs in Rust using Actix-web with PostgreSQL backing.

- Developed npm-based CLI tooling for internal developer use (written in TypeScript).
- Designed and implemented high-throughput APIs and background workers using Actix-Web and Tokio in Rust.
- Integrated PostgreSQL and Redis with Diesel ORM to manage transactions, caching, and reporting services.
- Built CLI tools using Rust for internal DevOps automation (CI/CD checks, code scanning, infra reporting).
- Reduced memory leaks and improved runtime safety by replacing C++ components with Rust FFI bindings.
- Achieved 45% faster performance in backend workflows with Rust-based job queues.
- Ensured compliance with healthcare regulations (HIPAA, FHIR, HL7) for sensitive patient data.
- Integrated Kafka for real-time data streaming and processing, reducing data latency by 40%.
- Implemented CI/CD pipelines with Terraform and Kubernetes to automate deployments and infrastructure management.
- Developed a patient management system using PHP and Laravel, improving appointment scheduling efficiency by 30% for a healthcare provider.
- Built HIPAA-compliant healthcare portals with PHP and MySQL, ensuring secure and accessible patient data management.
- Created RESTful APIs in PHP for integrating healthcare applications with third-party services, reducing system integration time by 25%.
- Implemented an online billing system using PHP and Stripe for a healthcare organization, streamlining payment processes and reducing errors by 15%.
- Designed a PHP-based reporting dashboard for real-time analytics of patient records, enhancing decision-making capabilities in healthcare administration.
- Built a DApp using Web3.js on Ethereum with a React frontend, enabling decentralized eCommerace transactions.
- Designed and implemented a secure wallet system for users to store and transfer digital currencies, enhancing platform security and user trust.
- Integrated various cryptocurrency APIs to provide real-time pricing and transaction data, improving the platform's reliability and user experience.
- Designed a user interface for coordinating gift exchanges in eCommerce, increasing user interaction.
- Built backend services using GoLang, Ruby on Rails, Elixir, Java/Kotlin, and Spring Boot for eCommerce, increasing transaction throughput by 20%.
- Implemented Android applications involving various technologies, including real-time communication via WebSockets, Google Workspace APIs, gRPC, and protocol buffers.
- Developed and deployed scalable applications using GCP, including Cloud Functions and Cloud Run for serverless processing, improving application efficiency by 30%.
- Integrated BigQuery for real-time analytics, enabling faster data processing and reporting, reducing query time by 25%.
- Led the migration of microservices to GCP, utilizing Kubernetes and Cloud Run for container orchestration, resulting in 40% faster deployments.
- Utilized Pub/Sub for asynchronous messaging and event-driven architecture to handle millions of transactions per day.
- Implemented CI/CD pipelines using Google Cloud Build and GitHub Actions, improving deployment speed and reducing errors.
- Continuously evaluated and improved the technological stack, architecture, and code quality across all Android projects.
- Designed and deployed a rule-based engine in Java to dynamically apply pricing and discount logic for an eCommerce platform, boosting promotional campaign efficiency.
- Created custom annotations and aspect-oriented programming (AOP) solutions in Java to automate logging, validation, and security checks across APIs.
- Used JavaFX to develop a lightweight desktop application for inventory tracking, supporting dynamic charting and real-time syncing with cloud services.
- Collaborated with QA to build JUnit and Mockito based automated testing pipelines, achieving 90%+ code coverage for critical Java modules.
- Worked with Spring Security in Java to implement OAuth2-based authentication and fine-grained access controls for user roles in a SaaS application.
- Built Java-based APIs and services to handle digital wallet transactions and fraud detection
- Developed backend services in Scala, working on an analytics platform.
- Wrote integration tests with TestNG and contributed to documentation.
- Integrated Temporal.io with existing microservices to automate long-running, stateful processes, reducing manual intervention and improving operational efficiency.
- Developed custom workflows and activities in Golang to streamline critical business operations, ensuring robust state management and retries.
- Implemented scalable backend systems using Scala for eCommerce, reducing server downtime by 50% during peak sales.
- Optimized services with Docker, Kafka, and microservices architecture, improving eCommerce performance.
- Developed distributed data processing pipelines using Apache Spark with Scala, optimizing ETL workflows for over 500 million records per day across real-time and batch layers.
- Designed and implemented scalable microservices in Scala using Akka HTTP and Akka Streams, achieving fault-tolerant communication and reactive backpressure handling.

- Utilized Scala with Apache Kafka to build an event-driven architecture for real-time customer behavior tracking and analytics ingestion in an eCommerce environment.
- Developed event-driven applications using Kafka to handle real-time data streaming and processing.
- Optimized database queries and schema design for CRDB and Cassandra, enhancing system performance and reliability.
- Built GraphQL APIs to provide flexible and efficient data retrieval, reducing API response times by 30%.
- Built a machine learning-based alarm classification system for Healthcare using Keras in Python.
- Developed a decentralized eCommerce platform using blockchain technology, ensuring secure and transparent transactions for users.
- Built and deployed smart contracts on Ethereum to facilitate automated, tamper-proof agreements for digital asset exchanges.
- Implemented blockchain solutions for supply chain management, improving traceability and reducing fraud in product deliveries.
- Integrated of blockchain with healthcare systems, enabling secure and efficient sharing of patient data across platforms.
- Implemented agentic LLM frameworks using LangChain for multi-step customer support automation and decision trees.
- Integrated LLMs with external APIs and databases for dynamic task execution and knowledge querying.
- Designed semantic memory modules to persist context across multi-turn interactions using Semantic Kernel.
- Designed AI-driven backend solutions for eCommerce, reducing processing times by 40%.
- Built a full-stack app for an insurance brokerage using Ruby on Rails, improving customer retention by 10%.
- Implemented data processing pipelines using libraries such as Pandas, NumPy, TensorFlow, Keras and Scikit-learn for machine learning model training and inference.
- Designed and deployed end-to-end machine learning pipelines using Python, scikit-learn, XGBoost, and TensorFlow, enabling predictive analytics for time-series sales forecasting with 94% accuracy.
- Built scalable training workflows using MLflow for experiment tracking and Airflow for model orchestration, reducing model iteration cycle time by 60%.
- Integrated Apache Spark with HDFS for large-scale data preprocessing (100M+ rows), optimizing feature engineering with Pandas, Dask, and NumPy for distributed execution.
- Developed NLP solutions using spaCy, Hugging Face Transformers, and BERT, achieving 87% F1 score on named entity recognition tasks across multilingual datasets.
- Deployed models as RESTful APIs using Flask, FastAPI, and TensorFlow Serving, with containerization via Docker and orchestration in Kubernetes environments.
- Created a full-stack journal app with TypeScript, React, Next.js, and MongoDB, enhancing platform security with encryption.
- Designed a full-stack solution for eCommerce platforms, improving uptime by 30% during Black Friday.
- Built a gift exchange app for eCommerce, supporting seamless participant communication and boosting interaction.
- Developed an ML pipeline for real-time security event analysis using GraphQL-fed data streams
- Implemented privacy-preserving techniques including ZKP and differential privacy for model training
- Benchmarked cryptonets for inference on encrypted data with homomorphic encryption layers
- Developed AI-powered applications for Healthcare using LangChain and OpenAI, optimizing healthcare data processing.
- Built intelligent, scalable AI applications for eCommerce, improving product recommendations and sales by 20%.
- Built and deployed AI-powered solutions in natural language processing (NLP) and computer vision, improving automation and business intelligence capabilities.
- Implemented machine learning algorithms for dynamic pricing in eCommerce, increasing transaction volumes by 10%.
- Created an AI-driven system for predictive analytics in Healthcare, reducing patient wait times by 15%.
- Engineered high-performance C++ algorithms for real-time data processing, optimizing computational efficiency and reducing execution time by 40% in a distributed system.
- Developed multi-threaded C++ applications for large-scale data ingestion, using parallel processing and memory management techniques to enhance system throughput.
- Designed serverless architectures using AWS services (API Gateway, Lambda, DynamoDB), ensuring 99.9% uptime and faster load times for eCommerce platforms.
- Migrated healthcare data from Google Cloud to Oracle DB, improving data management and retrieval time by 30%.
- Architected a cloud-native platform on GCP using Firebase for real-time data syncing and Firestore for document storage, ensuring high availability and low latency.
- Built and optimized data pipelines with Cloud Dataflow for processing large-scale datasets, improving performance by 50%.
- Used GCP's Cloud Identity for secure authentication and authorization, enhancing user data protection across applications.
- Designed and implemented automated backup strategies using Cloud Storage, ensuring disaster recovery capabilities and minimizing data loss risks.
- Integrated Cloud Monitoring and Logging for proactive performance tracking and issue resolution, reducing downtime by 15%.
- Built and deployed cloud-native microservices on AWS using Kubernetes, enabling efficient service orchestration and scaling for an AI-driven analytics platform.
- Developed scalable and secure eCommerce platforms using .NET and ASP.NET Core, resulting in a 30% increase in site performance and a 20% boost in conversion rates.
- Built cloud-native applications using AWS and .NET, ensuring high availability for eCommerce with 20% less downtime.

- Managed CI/CD pipelines with Jenkins, Git, CircleCI, and GitHub, automating deployments and improving efficiency by 25%.
- Optimized cloud infrastructure with Kubernetes and AWS CDK for scalable deployment.
- Improved ETL for eCommerce data, reducing processing time by 40% using SQL indexing and parallel processing in .NET.
- Utilized Blazor's component-based architecture and .NET technologies to build scalable, maintainable web applications, ensuring high code quality and performance.
- Optimized Snowflake queries and schema design, improving data retrieval performance by 25% for analytics dashboards.
- Implemented large-scale data processing for eCommerce data warehouses, improving transaction speed by 15%.
- Designed search solutions using ElasticSearch/OpenSearch and Postgres, improving search performance by 20%.
- Enhanced CI/CD pipelines with automated tests using RSpec, Selenium, JMeter, Gatling, and Axe, increasing test coverage.
- Conducted system reliability tests for eCommerce platforms, ensuring 99% uptime.
- Provided technical support for eCommerce and healthcare systems, ensuring minimal downtime.
- Implemented payment gateways (PayPal, Apple, Google) for eCommerce, improving transaction reliability by 10%.

Full Stack Developer

08/2015 – 05/2018

Createotech

Pittsburgh, PA, United States

- Developed custom plugins and themes for WordPress and Shopify, enhancing functionality and increasing eCommerce conversion rates by 30%. Created a Ruby on Rails web application for managing customer contracts.
- Rewrote and simplified a React and Ruby on Rails-based reporting system by defining architectural standards, eliminating unneeded layers, and simplifying and unifying components.
- Migrated legacy ETL scripts to Python-based solutions with better logging, error handling, and performance tuning.
- Maintained Ruby on Rails applications for internal project management, integrating with backend SQL Server databases.
- Built reporting views and optimized queries on SQL Server for executive dashboards.
- Served as a core member of the executive and management teams. Analyzed the market, developed GTM strategy, hired teams, and defined and honed messaging.
- Built user management systems, product listings, order flows, and integrated payment gateways (Stripe, Shopify) to streamline transactions and improve user experience.
- Scaled Shopify Plus stores with custom themes, API integrations, and advanced features like personalized shopping and multi-currency support, boosting sales by 25%. Created modules for an internal closed-source PHP framework. Built quick-turnaround MVPs for startups using FastAPI (Python) and Node.js. Deployed multiple web apps using React + TypeScript with Rust-powered APIs.
- Built a couple of websites based on an internal PHP framework. Developed and maintained scalable web applications using Laravel PHP, using Forge for seamless server management and Vapor for efficient serverless deployment on AWS.
- Implemented RESTful APIs and backend services in Laravel, optimizing performance and security while integrating with third-party services to enhance SaaS and eCommerce platforms.
- Contributed to SaaS products by building REST APIs, implementing cloud infrastructure, and improving system reliability.
- Streamlined CI/CD pipelines for Laravel applications using Forge and Vapor, ensuring automated deployments, high availability, and cost-effective cloud infrastructure management. Helped to administer and maintain internal VPN servers.
- Created an XLS data import module for an eCommerce website.
- Implemented scalable, fault-tolerant workflows using Temporal.io in Golang, improving reliability and performance in distributed systems. Developed microservices with Node.js and GraphQL, ensuring modular and maintainable code.
- Integrated Kafka for real-time event streaming and fault-tolerant message processing.
- Automated infrastructure provisioning using Terraform, enabling consistent deployment of cloud resources across multiple environments and reducing deployment time by 50%.
- Developed and maintained Terraform scripts to manage and scale cloud infrastructure, ensuring seamless integration with existing systems and providing an optimized, repeatable deployment process.
- Deployed applications in Kubernetes and automated infrastructure with Terraform.
- Designed and optimized event-driven architectures using Temporal's task queues and activity workers, enhancing the system's ability to handle complex business logic.
- Engineered high-performance, concurrent systems in Golang, utilizing goroutines and channels for efficient task parallelization.
- Developed a multi-country eCommerce app using GoLang, Shopify, and React, enabling cross-border transactions and reducing operational inefficiencies by 20%.
- Developed scalable ETL solutions for large healthcare data warehouses using Snowflake and ADF. Optimized SQL queries and indexing strategies, reducing query execution time by 35%. Migrated legacy on-prem data pipelines to Azure Cloud, ensuring minimal downtime and enhanced security. Utilized Python (pandas, NumPy) for data wrangling and analysis, improving data processing efficiency. Created data governance frameworks for secure and efficient data handling across multiple state healthcare projects.
- Designed web applications supporting patient management, appointment scheduling, and healthcare analytics, improving administrative efficiency by 40%.
- Built CMS platforms for healthcare providers and academic journals using WordPress and Moodle, ensuring seamless content delivery.

- Implemented a microservices architecture for a healthcare data management system, using Java/Kotlin and Spring Boot, improving system resilience and maintainability. Designed and maintained scalable backend services using Kotlin + Spring Boot.
- Migrated legacy monoliths to microservices architecture, improving deployment speed by 40%.
- Created PostgreSQL schema design and optimization, reducing query latency by 50%.
- Containerized services with Docker and deployed to Kubernetes clusters on AWS.
- Owned key services from ideation to production, mentoring junior developers and reviewing PRs.
- Modern call center systems are built with cloud-based infrastructure, offering scalability, remote agent support, and seamless integration with CRM platforms, helping improve operational flexibility and customer service quality.
- Real-time analytics and reporting features in call center systems provide insights into call volumes, agent performance, and customer satisfaction, helping managers optimize workflows and make data-driven decisions.
- Deployed AI-driven systems for predictive analytics in eCommerce, increasing customer retention by 18%.
- Streamlined healthcare workflows with machine learning models, reducing error rates by 25%.
- used LLMs to accelerate code development and debugging, saving 30% in project timelines.
- Designed relational databases (PostgreSQL, MySQL) for eCommerce and healthcare systems, achieving 99.9% uptime and 20% faster query performance.
- Implemented scalable NoSQL models (MongoDB, Redis) to handle large datasets, enabling seamless scaling for applications with 1M+ users. Configured CI/CD pipelines with GitHub Actions, reducing deployment times by 40%.
- Optimized cloud solutions with AWS, cutting infrastructure costs by 25% while improving reliability.
- Deployed real-time data processing with Kafka, enhancing data sync speeds by 35%.
- Improved page load times by 25% through front-end optimization with React, Angular, and Vue.js.
- Automated testing frameworks ensured 99% bug-free deployments for both eCommerce and healthcare platforms.
- Implemented an internal A/B testing framework using feature flags and analytics tools, enabling rapid experimentation across the web platform.

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- Delivered integrations across several systems with the enterprise asset suite management system.
- Designed and optimization of relational and non-relational databases, including MySQL, PostgreSQL, and MongoDB, implementing advanced indexing strategies, partitioning, and replication to support high-throughput eCommerce systems.
- Developed and maintained GraphQL APIs integrated with diverse data sources such as Neo4j, Redis, and MariaDB, enabling flexible, scalable querying layers for product catalogs and customer data platforms.
- Architected end-to-end data ingestion pipelines utilizing the ELK Stack (Elasticsearch, Logstash, Kibana) and Clickhouse for real-time analytics and operational insights across distributed microservices.
- Managed secure, cloud-native data infrastructure using Firebase, Supabase, and DynamoDB, with emphasis on access control, backup automation, and high availability for mobile-first commerce applications.
- Administered enterprise-grade databases including Oracle, Snowflake, and MSSQL, ensuring optimal performance, compliance, and disaster recovery through advanced monitoring, tuning, and audit logging practices.
- Designed and implemented data pipelines using Snowflake and AWS Data Pipeline, reducing ETL processing times by 30%.
- Developed and optimized ETL pipelines in Azure Data Factory (ADF) to process large-scale healthcare datasets for state projects.
- Designed and managed Snowflake as a primary data warehouse, optimizing query performance and reducing storage costs by 20%.
- Technical architect in the development of ETLs to bring data from the Redshift data lake to project-specific Snowflake, Postgres, and Neo4j databases to represent complex relationships across different objects used for quality control.
- Built logic to provide restart capability in case of failures during the load. Produced several data pipelines and improved the performance of these ETLs.
- Developed a data model to support the UI for capacity planning, schedule optimization in labs, quality assurance, and resource management projects.
- Developed ETLs to forecast demand and perform inspection analyses using historical data.
- Designed, developed, and implemented search functionality using Elasticsearch across multiple languages. Converted the initial Postgres search logic to Elasticsearch for better performance.
- Built complex logic to reconcile source and target data. Added error handling such that after a failed run and reconciliation, notifications are sent, and data is reset in a manner that does not impact the front-end applications.

LANGUAGES

English (native) | **French** (fluent) | **Mandarine** (fluent)