

MAHMOOD UL ISLAM

Software Engineer

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Areas of expertise

Programming Languages: JavaScript, Python

Frontend Development

Frameworks & Libraries: React.js, Next.js, Vue.js, Quasar Framework, React Native (Expo)
State Management & Utilities: Redux, Vuex, React Query, react-i18next
Data Visualization & UI Components: Chart.js, ECharts, react-calendar, vue-cal, PDFMake

Backend Development

Server-Side Development: Node.js, Express.js, Next.js (API Routes & Middleware)
Serverless & Cloud-Native Backend: AWS Lambda, AWS Amplify Backend
API Development: RESTful APIs, GraphQL, Apollo GraphQL
Real-Time Communication: WebSockets, Server-Sent Events (SSE), Amazon Chime SDK, WebRTC, Socket.IO

Database Management & Storage

Relational Databases: PostgreSQL, MySQL, Amazon RDS
NoSQL Databases: Firebase Firestore, MongoDB, Amazon DynamoDB
ORM & Cloud Storage: Prisma, Sequelize, Amazon S3

Cloud & DevOps (AWS)

Compute & Containers: AWS Fargate (Amazon ECS), Amazon EC2, AWS Lambda
Networking & API Management: Amazon API Gateway, AWS EventBridge
Storage & Databases: Amazon S3, Amazon RDS, Amazon DynamoDB
Messaging & Streaming Services: Amazon SNS, Amazon SQS, Amazon Pinpoint, Amazon Kinesis
Security & Identity Management: AWS Cognito, AWS Identity and Access Management (IAM), AWS Secrets Manager
AI & Machine Learning: Amazon Bedrock, Amazon Transcribe, Amazon Rekognition, Amazon HealthLake
Monitoring & Automation: Amazon CloudWatch, AWS Step Functions

Authentication & Security

Protocols & Standards: OAuth 2.0, OpenID Connect (OIDC)
Libraries & Tools: Crypto.js, bcrypt.js, AWS Secrets Manager, Auth0, AWS Cognito

Build & Deployment Tools

Version Control & CI/CD: GitHub, Bitbucket, GitHub Action
Containerization & Bundling: Docker, Docker Compose, Vite, Webpack

Testing & Code Quality

Testing & Automation: Jest, Puppeteer, Custom Node.js Scripts
Linting & Formatting: ESLint, Prettier

CMS Integration: WordPress, Storyblok CMS

Experience

Virtual Health Hub

Software Developer

August 2024 – Present

Location: Saskatoon, Saskatchewan, Canada

Project: "LifeLine" (<https://virtualhealthhub.ca/>), (<https://research-groups.usask.ca/remote-presence>)

Virtual Mental Health Treatment Platform

Technologies: JavaScript, React.js, Vue.js, Quasar, React Native (Expo), Node.js, Express.js, REST APIs, PostgreSQL, SASS, CSS

AWS Services: Amplify, API Gateway, Bedrock, Kinesis, ECS (Fargate), RDS, EventBridge, Chime SDK, Lambda, Step Functions, S3, CloudWatch, Amazon Pinpoint, Cognito.

Key Responsibilities & Contributions:

Project Leadership: Managing the Lifeline Project end-to-end, including development, cloud infrastructure, and solution architecture, ensuring scalability and compliance with healthcare standards.

Full-Stack System Development:

- Built a highly scalable system using Vue.js, React.js, Quasar, and React Native (Expo) for enterprise-level healthcare applications.
- Developed and maintained REST APIs using Node.js and Express.js, backed by PostgreSQL for efficient data management.
- Created custom libraries and internal applications to enhance system efficiency and improve client management.
- Developed a native custom module in Expo using Swift & Kotlin to bridge Amazon Chime SDK with React Native, enabling seamless audio/video conferencing capabilities.
- Created a Vite compilation bundle to integrate Vue.js and React.js components within the same Quasar app, allowing smooth execution of Amazon Chime SDK React components alongside Vue-based UI.

Cloud Infrastructure & Security:

- Architected and managed AWS cloud infrastructure, including Cognito, ECS (Fargate), RDS, EventBridge, Pinpoint, API Gateway, and Chime SDK for secure and scalable operations.
- Implemented secure authentication mechanisms with AWS Cognito and Auth0 for seamless user management.

AI & Machine Learning Integration:

- Developing AI models using AWS Bedrock and Kinesis to enhance medical data processing, automation, and real-time insights.

- Integrated Amazon Chime SDK with Amazon Transcribe, Rekognition, and Bedrock for real-time audio/video analysis, AI-driven chatbot interactions, and structured medical record processing using Amazon HealthLake.

Feature Development for Virtual Healthcare:

- Designed and developed an appointment booking system with a complete workflow for a Virtual Clinic, optimizing doctor-patient interactions.
- Developed a medication management system and an AI chatbot that integrates with the project's AI model, enhancing patient adherence, physician oversight, and AI-driven interactions.

Stakeholder & Research Collaboration:

- Collaborating with stakeholders and medical professionals to enhance system efficiency and gather requirements.
- Conducting usability tests in rural Saskatchewan, collecting patient feedback to refine AI-driven healthcare solutions.

Saaska Software Inc.

Software Engineer and Technical Support Assistant

April 2023 – June 2023

Location: Saskatoon, Saskatchewan, Canada

Project: “esiKidz” (<https://esikidz.com/>) childcare management software.

Project’s usage:

JavaScript, React.js, React Native, node.js, REST APIs, MySQL, SASS, CSS, Git, Bitbucket, Trello, Jira.

- SAAS development by React.js & React Native at the enterprise level.
- Specialize in developing and managing secure web and mobile apps.
- Learning data science by creating apps for web crawling, data extraction, and manipulation.
- Creating & practicing various libraries for data extraction, filtration, and React UI styling.
- Experiencing AWS Lambda, Amazon-S3, and other related technologies.
- Developing multiple internal applications & custom libraries to support the software system in efficiently managing clients.

Project’s specific works:

- Working collaboratively in a team to maintain the overall architecture and develop a highly scalable system integrated with ReactJS & React-Native APPs, communicating via Node JS API services.
- Performing optimization of developer toolchain to support instant provisioning of new services and infrastructure, fully automating the deployment, and minimizing development friction.
- Designing and implementing to improve software’s reliability, scalability, performance, and security.
- Supporting Business Development and Marketing by creating internal software to enhance tasks.
- Performing software testing, improving existing systems, and adding new features.
- Creating and maintaining documentation on test and development operations.
- Demonstrating the system to new customers and providing technical support to existing customers.

SELISE Digital Platforms

Software Engineer

June 2022 – Aug 2022

Project: Sunrise-club (<https://www.sunrise.ch/en/moments>), an Event booking site for the Telco (Sunrise) users of Switzerland

Project’s usage:

JavaScript, TypeScript, React.js, Next.js, MongoDB, REST APIs, Storyblok CMS, Material UI, Ant Design UI, React-bootstrap, SASS, bootstrap, CSS, GitHub, Jira.

- Learned Next.js at the enterprise level, the pros, and cons of using Next.js to maintain URL redirection
- Created a website with high security and maintained a web firewall
- Learned to implement OAuth 2 + OIDC and learned to implement Adobe Analytics
- Experienced using Material UI + React-Bootstrap and SASS
- Proficient in using logger in the project, Building API in Next.js, implementing Storyblok CMS, MongoDB database
- Practiced using SWR with Axios, Crypto.js, and Lodash.

Project’s specific works:

- Maintained URL redirect with WAF (Web Application Firewall) in the production site. Creating an API & middleware through Next.js
- Maintained 3 test environments and helped my peer with fixing up commit history on the main branch in our project
- Created documentation with code standards of the codebase of our project, implementing CSS modules into our main project
- Constructed a complete language translation system

Quantic Dynamics Ltd.

Web Developer

Feb 2019 – May 2022

Project’s usage:

JavaScript, React.js, Next.js, MongoDB, Firebase, Material UI, Ant Design UI, React-bootstrap, SASS, bootstrap, CSS, GitHub, GitLab, Trello.

- Learned to use SWR with Axios, Crypto.js, and Lodash as well as learned to use cookies and query parameters.
- Implement search and sort functions and manipulate data from the user using node.js.
- Experienced using Material UI + Ant Design and SASS altogether.
- Customized fully responsive websites with mobile, tablet and desktop views.
- Architected frontend & backend solutions, implementing asynchronous client-server communication via REST API and setting up the server with database.

Education

- Applied Certificate in Website Design and Development: Saskatchewan Polytechnic
Completion: 2023
- Bachelor of Science in Textile Engineering: Ahsanullah University of Science & Technology
Completion: 2012 (WES Canadian equivalency 4-year bachelor, Ref# 4848976)