



## PROFILE

As a Lead Software System Engineer/Architect, I leverage my expertise to guide the success of software projects through the design of robust systems, critical technology decisions, and meticulous code reviews. I foster a culture of excellence by promoting mentorship, training, and effective communication with both technical and non-technical stakeholders. Actively engaging in the evolution of software development processes, I address complex challenges, collaborate with cross-functional teams, and prioritize the growth of junior engineers, creating an environment that encourages continuous learning. With a Ph.D. in Computer Science and a master's in data analytics, I seamlessly blend academic knowledge with practical skills in artificial intelligence (AI) and data analysis. Passionate about AI, I explore machine learning intricacies and contribute to innovative applications. As a proficient data analyst, I adeptly collect, process, and analyze data for actionable insights. Committed to staying current in technology, I am eager to apply my skills at the intersection of AI and data for meaningful projects, contributing to their overall success.

## ACADEMIA



2009-2014

**Ph.D. in Computer Science**  
**New Mexico State University**  
Dissertation title was "Monitoring Scientific Applications in HPC Systems for Better Production Observability and Control"



2019-2022

**M.Sc. in Data Analytics**  
**Georgia Institute of Technology**  
Interdisciplinary program on analytics and data science. It covers statistics, operations research, computing, and business.  
Project: "FLFT: The Feature Level Forecasting Tool".



2007-2009

**M.Sc. in Computer Science**  
**New Mexico State University**  
My thesis was "Evaluation of Multi-Core Programming Paradigms".



1999-2003

**B.Sc. in Computer Engineering**  
**Razi University Kermanshah**

## EXPERIENCE

### intel. Sr. Software Solutions Architect

2021-2023

As a Software Architect leading the development of next-generation NUC software products, I contributed to pathfinding software solutions that aligned with segment strategies, leveraging Azure and AWS for cloud-based environments when necessary. I played a role in long-term software technology planning, offering guidance on build/release/deployment design and functionality to IT personnel and developers. I actively managed risks, considered scalability, and maintained clear documentation as part of my responsibilities.

Beyond my architectural duties, I led an outstanding outsourced software engineering team, aiming to foster collaboration and effective communication. This leadership approach, I believe, played a part in optimizing resources, timelines, and risk management for successful project execution and the delivery of high-quality solutions. Additionally, I oversaw application functionality, ensuring aspects like database integrity, data loading, quality assurance, and export. This approach aligned with our commitment to delivering next-generation NUC products and technologies through collaboration with teams, ISVs, and ODMs, both in Azure and AWS environments.

#### Technical Expertise Highlights:

- Applying Agile development, ensuring independent software delivery.
- Leveraging expertise in programming languages and package management.
- Implementing Docker and Kubernetes for efficient scalability.
- Managing Linux, Git, GitHub, and executing CI/CD pipelines competently.
- Excelling in cloud programming, particularly within the Azure environment.
- Applying CI/CD methodologies and utilizing relevant tooling.
- Integrating security concepts and tools effectively into projects.
- Operating Azure and Kubernetes in high-stakes production environments.

## intel. Software Technology Architect

2020-2021

In my role as a Software Technology Architect, I played a pivotal role in shaping the strategic direction of industrial software tools. My primary focus was on optimizing solutions, contributing valuable insights to strategic planning processes. Acting as a bridge between technical intricacies and market demands, I supported the sales and marketing teams by guiding cross-functional collaboration and developing compelling sales collateral. I proactively identified customization opportunities, ensuring our software solutions aligned seamlessly with evolving customer needs. Engaging in continuous improvement, I facilitated a feedback loop between sales and product development, emphasizing a commitment to refining our offerings. Through the creation of impactful collateral and Proof of Concepts (POCs), I not only supported the sales and marketing teams but also simplified complex engineering concepts to facilitate broader understanding. Staying abreast of industry trends, I contributed to effective product positioning and played a key role in training initiatives. My involvement extended to providing value propositions and actively participating in go-to-market activities, showcasing a comprehensive approach to product management and market success.

### Technical Expertise Highlights:

- Integrated tech with business goals for innovative solutions.
- Orchestrated team collaboration, aligning tech with sales and marketing.
- Implemented tailored customization for finely tuned software.
- Facilitated feedback loop between sales and product development.
- Created compelling sales collateral and simplified complex concepts.
- Stayed current with industry trends for cutting-edge offerings.
- Simplified engineering concepts through effective training methods.
- Developed captivating value propositions for successful market entry.

## intel. Senior Software Engineer

2012-2020

As a Senior Software Engineer, my primary focus was on ensuring the quality and reliability of our software through meticulous implementation and validation, drawing upon my experience. I showcased expertise in end-to-end system integration, playing a pivotal role in crafting cohesive and high-performing systems that met the highest standards. Proficient in backend and cloud development, I consistently delivered scalable solutions, meeting the dynamic demands of our diverse projects. Functioning as an effective technical leader, I actively fostered collaboration within the team, conducting thorough code reviews to uphold and enhance our coding standards. Through mentorship initiatives, I actively contributed to the growth of junior team members, emphasizing the paramount importance of continuous learning. In project management, I leveraged my adept problem-solving skills to estimate timelines accurately and proactively identify potential risks. The commitment to quality, technical leadership, and collaborative efforts played a pivotal role in ensuring the resounding success of our software projects.

### Technical Expertise Highlights:

- Ensured software quality and reliability through meticulous implementation and validation.
- Showcased proficiency in end-to-end system integration, contributing to high-performing systems.
- Demonstrated expertise in scalable backend and cloud development for dynamic project needs.
- Functioned as an effective technical leader, fostering collaboration and maintaining coding standards.
- Actively contributed to the growth of junior team members through mentorship initiatives.
- Leveraged adept problem-solving skills in project management, ensuring accurate timelines.
- Successfully managed projects with a commitment to quality, technical leadership, and collaboration.
- Enhanced collaborative coding workflows and automated continuous integration for streamlined development processes, using tools like Visual Studio Code, Git, TeamCity, and Jenkins.

## :mtg Software Engineer

2004-2007

As a Software Engineer specialized in IVR application development, my role was instrumental in crafting seamless and efficient telephony solutions for our primary customers, Bahrain and MTC. Having spent one year in the UAE and two years in Bahrain, I collaborated closely with cross-functional teams to gather and analyze requirements. Applying my expertise in scripting and coding, I developed and optimized call flow logic using VOS. Rigorous testing ensured the reliability of the applications. My commitment to user-centric Voice User Interface (VUI) design, guided by usability principles and feedback gathered. Overall, my contribution played a key role in the enhancement of our telephony systems for our customer from these prominent telecom providers.

## AI AI Enthusiast and Researcher

2015-Present

As a passionate AI researcher and practitioner, I've dedicated nearly seven years to exploring and experimenting in the field. Fueled by an insatiable appetite for learning, I continuously strive to deepen my knowledge and skills in artificial intelligence. With a master's degree in data analytics/AI, my academic background forms a robust foundation for my endeavors. To further fuel my passion, I undertake personal projects, conduct research, and engage in hands-on experimentation with AI technologies. Recently, I've harnessed the power of LangChain to leverage Language Model (LLM) capabilities in solving problems and introducing innovative solutions. Committed to sharing my experiences and insights, I've initiated an informative blog that provides a glimpse into my journey and discoveries.

### Technical Expertise Highlights:

- Conduct cutting-edge AI research, staying current with developments and exploring LangChain's applications, particularly in Language Model (LLM) technology.
- Perform data analysis using LangChain, extracting valuable insights to enhance AI models.
- Stay curious and committed to continuous learning, incorporating new AI advancements, including Language Model (LLM) capabilities, with a recent focus on LangChain.
- Proficiently handle and preprocess extensive datasets for AI model training, optimizing processes with LangChain.

### AI and LLM Projects:

**Streamlining Performance Benchmark Extraction from Websites and YouTube.** I led a project to summarize performance benchmarks from websites and YouTube, involving capturing, extraction using Lava LLM, and data saving in various formats such as Excel and CSV.








**Azure AI Delivery Recognition & Interaction.** In this project, we developed an app using Azure AI Vision to recognize Amazon deliveries and greet the delivery person with gratitude for their service. Moreover, the application integrated Azure OpenAI GPT LLM for engaging in brief conversational interactions.

### ML for Data Analytics Project:






The **Feature Level Forecasting Tool (FLFT)** is a project that uses machine learning to forecast Average Selling Price (ASP), with rigorous data analysis showing high accuracy (0.92 coefficient of determination). 12 selected algorithms effectively predict 92% of the data. FLFT offers a user-friendly Jupyter Notebook interface for efficient financial forecasting, benefiting the financial team.

## AREA OF EXPERTISE

### SOFTWARE ENGINEERING

-  **Software Development Life Cycle**  
UML, requirement elicitation, scenario and use case design, reverse engineering -- IBM Rational Team Concert.
-  **Unit Testing**  
JUnit, Karma, Mocha, Chai.
-  **Dynamic Analysis**  
Dynist (C/C++), ASM (Java), ASMDex (Android).
-  **Middle Tier Development**  
Java Enterprise Bean, JavaSocket, Message brokers (MQTT, RabbitMQ).
-  **Backend Development**  
Database design (schema and schemaless), MySQL, Oracle, SQLServer, MongoDB, Cassandra.
-  **Progressive Web Development**  
Angular, JQuery, JavaScript, TypeScript -- Bootstrap, Sass, Less -- Node.js, PHP, JSP, Java Servlet -- WordPress.
-  **Mobile Programming**  
Ionic (hybrid mobile app development), Android.

### DATA ANALYTICS AND AI

-  **ETL and Data Wrangling**  
Numpy, Pandas, csvkit, OpenRefine, RapidMiner.
-  **Data Visualization**  
Matplotlib, D3.js (Data-Driven Documents), Chartist.js, Chart.js, Tableau, Gephi.
-  **Machine Learning**  
Regression, classification, clustering, dimensionality reduction, ensemble methods, reinforcement learning, natural language processing, word embeddings, modeling --- Scikit learn.
-  **Deep Learning**  
Convolution neural networks for image recognition -- - Keras, Tensorflow, Pytorch, OpenVino.
-  **Large Language Models**  
Prompt Engineering, Sentiment Analysis, Text Summarization, Dialogue Systems, Contextual Reasoning, Text Classification, text to image model --- OpenAi API.

## BIG DATA, CLOUD, AND HPC



### Big Data

Hadoop, Spark, Storm, Cassandra, MongoDB, and tools from data analytics.



### Cloud Infrastructure

Design the architecture of the infrastructure to optimum the performance of VMs/containers and provides high availability and reliability.



### High Performance Computing (HPC)

Message Passing Interface (MPI), OpenMP, pThread, Java Threads, Java RMI, Java Messaging, Pipelining.



### Orchestration, Containerization/Virtualization

Docker - OpenStack, CloudStack, VMware ESXi - Docker Swarm, Kubernetes -- Vagrant, KVM, Oracle virtual machine.

## DEVOPS, AUTOMATION, CICD



### Continuous Integration and Development

TeamCity, Jenkins, GitLab.



### Automation

Yomen, Gulp, Grunt, Uglify, HtmlHint, CSSLint.

## DISTRIBUTED SOFTWARE DESIGN



### Message Brokers

Apache Kafka, RabbitMQ, ActiveMQ



### Microservices Frameworks:

Java, Node.js, .NET Core



### Load Balancers

Nginx, HAProxy, Azure Load Balancer, AWS LB



### Service Discovery and Coordination

Consul, etcd, AWS Cloud Map, Azure Service Fabric, Zookeeper



### Configuration Management

Ansible



### Monitoring Tools

New Relic, DataDog



### Containerization and Orchestration

Docker, Kubernetes



### API Gateways

Neflix Zuul, Kong, Azure and AWS gateways



### Distributed Databases

MongoDB, Cassandra, Redis (Caching)



### API Documentation Tools

Swagger, OpenAPI



### Security Frameworks

OAuth 2.0, JWT (JSON Web Tokens), mTLS



### Log Systems

ELK Elastic Search - Logstash - Kabana

## PATENTS



- A Flexible, Modular Hardware Edge System for the Internet of Things (Alma Peak jumbo patent)
- For Academic publications and blog postings please refer to my website @ [www.hsharifi.us](http://www.hsharifi.us)

## CERTIFICATIONS



Java Certified Programmer



Java Certified Web Component Developer



Java Certified Business Component Developer



Docker Certified Associate



TOGAF Enterprise Architect (WIP)



Multiple Data Science Courses  
Coursera, Edx, DataCamp, IBM online.