



PROFILE

As a Lead Software System Engineer/Architect, I specialize in guiding successful software projects through robust system design, critical technology decisions, and meticulous code reviews. With a focus on fostering a culture of excellence through mentorship and effective communication, I actively contribute to the evolution of software development processes, address complex challenges, and prioritize the growth of junior engineers. Holding 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. My passion for AI leads me to explore machine learning intricacies and contribute to innovative applications, while my proficiency as a data analyst enables me to adeptly collect, process, and analyze data for actionable insights. Committed to staying current in technology trends, I am eager to leverage my leadership and technical skills in a software management role, driving teams toward excellence and delivering impactful solutions.

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 Architect/Manager

2021-2023

As a Software Solutions Architect/Manager spearheading the development of next-generation NUC software products, I took a strategic role in shaping innovative software solutions aligned with segment strategies. Leveraging Azure and AWS for cloud-based environments when necessary, I contributed to pathfinding initiatives and provided guidance on long-term software technology planning. In addition to overseeing build/release/deployment design and functionality, I actively managed risks, prioritized scalability, and maintained comprehensive documentation to ensure the success of the software development life cycle.

In tandem with my architectural responsibilities, I assumed a leadership position in managing an outsourced software engineering team, emphasizing collaboration and effective communication. This managerial approach played a pivotal role in optimizing resources, timelines, and risk management, leading to successful project execution and the delivery of high-quality solutions. Beyond this, my oversight extended to application functionality, where I ensured key aspects such as database integrity, data loading, quality assurance, and export were meticulously addressed. This holistic managerial strategy remained in alignment with our overarching commitment to delivering next-generation NUC products and technologies, fostering collaboration with internal teams, ISVs, and ODMs across both 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 Manager

2020-2021

In my role as Software Technology Manager, I strategically directed industrial software tools, optimizing solutions and providing key insights for strategic planning. Serving as a bridge between technical intricacies and market demands, I facilitated cross-functional collaboration for the sales and marketing teams, crafting impactful collateral. Proactively identifying customization opportunities, I ensured our software solutions aligned seamlessly with evolving customer needs, contributing to our competitive edge. Committing to continuous improvement, I established a feedback loop between sales and product development, refining offerings. Through impactful collateral and Proof of Concepts (POCs), I simplified complex engineering concepts, supporting broader understanding. Remaining attuned to industry trends, I played a key role in effective product positioning and participated in go-to-market activities, showcasing a strategic approach to product management for 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 leadership focused on ensuring software quality and reliability through meticulous implementation, leveraging extensive experience. Proficient in end-to-end system integration and backend/cloud development, I consistently delivered high-performing, scalable solutions for diverse projects. Acting as a strategic technical leader, I fostered team collaboration, conducted code reviews, and mentored junior members to emphasize continuous learning. Significantly, I successfully led an outsourced team, ensuring effective collaboration and alignment with project goals. In project management, I applied adept problem-solving skills to estimate timelines accurately and proactively identify risks. The commitment to quality, technical leadership, collaboration, and efficient management of outsourced teams 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

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.