

Harshit Rakesh Shiroyia

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WORK EXPERIENCE

Software Engineer - II, Medpace, Inc. [🔗](#)

Jun 2023 – present | Cincinnati, USA

- Architected 3 clinical software products as micro-frontend Angular applications using Angular Signals for reactive state management, eliminating redundant change-detection cycles and improving rendering performance by **40%**.
- Engineered a version control system for clinical studies leveraging Azure Blob Storage to maintain **100% version histories** across all study configurations, ensuring full audit traceability.
- Orchestrated containerized microservice deployments on Azure Kubernetes Service (AKS) with Azure Container Registry, boosting scalability **40%**, accelerating deployment velocity **30%**, and reducing infrastructure costs by **35%**.
- Deployed a distributed caching layer using Azure Cache for Redis with .NET Core (C#) and Entity Framework, cutting API latency by **50%** and reducing database load by **35%** under peak workloads for **2,000+ concurrent users**.
- Established ESB-based and event-driven microservice communication via Azure Service Bus; instrumented observability with Azure Monitor and Application Insights, reducing incident mean-time-to-detect (MTTD) by **60%**.
- Introduced GraphQL alongside RESTful APIs for clinical dashboards, cutting API response time by **35%** and eliminating over-fetching; refactored monolithic application into microservices, improving scalability and maintainability.
- Led sprint planning across 3 clinical products, achieving **99% alignment** with business owners on priorities and timelines; mentored 2 junior engineers and boosted UX satisfaction scores by **25%**.

Software Engineer - Research Assistant, Indiana University [🔗](#)

Aug 2022 – May 2023 | Bloomington, USA

- Architected a distributed data ingestion pipeline integrating Twitter, YouTube, and Reddit APIs to process high-volume sentiment data for **164 entities**, aiding **1,000+ researchers** with NLP-based emotion classification.
- Optimized data workflows with advanced algorithms and SQL pipelines, reducing processing time by **30%** and enabling insights on medication efficacy for **10,000+ patients**.
- Introduced caching and async processing alongside Azure Data Lake Storage and Azure Service Bus for large-scale data management and reliable service communication, reducing latency by **50%**.
- Designed optimized MongoDB schemas for time-series social data with compound indexes, enabling **sub-second querying**.

Software Engineer Intern, PERQ [🔗](#)

May 2022 – Dec 2022 | Indianapolis, USA

- Built scalable .NET Core (C#) backend microservices and WCAG 2.1-compliant frontends using Angular and Vue.js, integrating AWS S3 and Amazon RDS (PostgreSQL) to support a **30% scalability improvement** across high-traffic marketing automation workflows.
- Configured Memcached server-side caching layer, reducing database round-trips by **40%** and boosting throughput for peak-load marketing campaigns serving thousands of concurrent users.
- Automated end-to-end CI/CD pipelines using AWS CodePipeline and CodeBuild, cutting release cycle time by **25%** and enabling faster, more reliable feature deployments across environments.

EDUCATION

MS in Computer Science, Indiana University, (CGPA: 3.7/4.0)

Aug 2021 – May 2023

Bachelor of Engineering in IT, University of Mumbai, (GPA: 3.8/4.0)

Aug 2017 – Jun 2021

PROJECTS

Distributed Health Telemetry System, Node.js, React, MongoDB, Angular, AWS

- Built a cloud-native health monitoring platform on AWS (EC2, S3, Lambda) with OAuth 2.0 authentication, video streaming, real-time chat, and subscription management.
- Leveraged React Router for client-side navigation, reducing Time to Interactive by **27%**; backed recommendations with MongoDB aggregation pipelines for personalized content delivery.

Shipment Pricing & Configuration System, React, Node.js, Express.js, SQL Server, RESTful APIs, Azure, Chart.js

- Engineered a cost estimation system using Node.js and Express.js with SQL Server, reducing estimation time by **95%** through efficient backend logic and database optimization.
- Designed an admin interface for rate configuration and customer-facing visualization, reducing production planning time by **30%**.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, C#, Java, C, PHP, SQL

Frontend: Angular, RxJS, React, Vue.js, HTML5, CSS3, Bootstrap, jQuery, AJAX, Selenium

Backend & APIs: .NET Core (C#), ASP.NET [🔗](#), Node.js, Express.js, Django, Flask, GraphQL, RESTful APIs, Entity Framework, MVC

Cloud & DevOps: Azure (AKS, Container Registry, Service Bus, Blob Storage, Monitor, App Insights, Cache for Redis), AWS (S3, RDS, EC2, Lambda, CodePipeline, CodeBuild), GCP, Docker, Kubernetes, CI/CD, Jenkins, GitHub Actions, Azure DevOps

Databases: SQL Server, PostgreSQL, MongoDB, MySQL, CosmosDB, DynamoDB, Amazon RDS, Amazon S3, Redis, Memcached

Architecture: Microservices, Micro-frontend, Event-Driven Architecture, ESB Messaging, Distributed Systems, MVC, Caching Strategies

Tools: Git, GitHub, Bitbucket, JIRA, Postman, Docker, ServiceNow, OAuth 2.0, Agile/Scrum, Crucible

Certifications: Infosys Certified Software Engineer, Microsoft Certified Python Programmer, Star Certified Cyber User