

# SINA KIAMEHR

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## SUMMARY

Harvard-educated software engineer and healthcare technology consultant with expertise in **cloud architecture, AI/ML integration, and HIPAA-compliant systems**. Recently designed and deployed an enterprise Clinical Registry Automation System on AWS, implementing **serverless-first architecture**, AI-powered clinical note processing, and secure, scalable data infrastructure. Experienced in cloud-based AI (Amazon Bedrock) and local AI deployment (Ollama) for secure, offline workflows. Proven record of **reducing infrastructure costs by 60–80%** while improving performance and compliance. Skilled at bridging technical and business teams to deliver innovative solutions in **healthcare, life sciences, and data analytics**. Proficient in **Python, AWS CDK, DynamoDB, API Gateway, Step Functions, SQL, and relational/NoSQL database design**.

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## TECHNICAL SKILLS

- **Cloud Architecture & Infrastructure:** AWS CDK, Lambda, DynamoDB, Aurora PostgreSQL, PostgreSQL, API Gateway, Step Functions, EventBridge, CloudWatch, S3, KMS, VPC, WAF, IAM, Serverless Architecture, IaC
- **AI & Machine Learning:** Amazon Bedrock (NLP), Ollama (Local LLM Deployment), AI-powered PDF/data extraction, Local AI Model Hosting & Inference, Event-driven architectures, Intelligent document parsing
- **Programming Languages:** Python, JavaScript, SQL, R, MATLAB, HTML5, CSS3
- **Databases:** Relational Database Design (Certified), DynamoDB, Aurora PostgreSQL, PostgreSQL, Query Optimization
- **Frameworks & Tools:** React, React Native, Next.js, Vite.js, D3.js, Bootstrap
- **Data Visualization & Analytics:** Tableau, D3.js, GraphPad, ImageJ
- **DevOps & Testing:** Git, GitHub, CI/CD Pipelines, Automated Deployments, Unit & Integration Testing (90%+ coverage)
- **Security & Compliance:** HIPAA Compliance, End-to-End Encryption, IAM Role Design, Audit Logging
- **Certifications:** FreeCodeCamp – Responsive Web Design, JavaScript Algorithms & Data Structures, Front End Development Libraries, Data Visualization, Relational Database Certification

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## EDUCATION

Harvard University — B.S. in Chemistry and Physical Biology; Secondary in Computer Science  
2018 – 2022

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## PROFESSIONAL EXPERIENCE

### LA Shoulder & Elbow Surgery – *Research Assistant*

2025 – Present

- Developed **dashboards** to track surgical outcomes for total reverse shoulder arthroplasty patients
- Automated **data entry, storage, and analytics** for improved accuracy and efficiency
- Built **HIPAA-compliant AWS infrastructure** (Lambda, DynamoDB, API Gateway, Step Functions, Bedrock, EventBridge, CloudWatch, VPC, WAF, KMS encryption)
- Integrated **AI-powered NLP** for clinical note processing with 95%+ accuracy
- Implemented **CI/CD pipelines** and automated deployments for scalable, secure clinical systems

### Kossoris Search – *Marketing Coordinator*

2024 – 2025

- Managed mass email campaigns (~1M emails/month), **increasing response rates by 25%** while reducing total volume
- Optimized targeting via demographic/geographic analytics
- Created **KPIs** to measure and improve campaign performance
- Developed **version-controlled template system** to ensure consistent branding

### Clarivate Analytics – *Associate, Market Access Pricing & Reimbursement*

2022 – 2023

- Led research and analytics for top pharma clients (**Novartis, Johnson & Johnson**).
- Built datasets and models in **Python** and **SQL** to inform market access strategies across oncology, rare diseases, and mental health

- Created **dashboards and presentations** for executive decision-making
- Key Achievements:
  - Novartis: Breast cancer market access assessment; strategic launch recommendations
  - J&J: Value proposition optimization for multiple myeloma therapy; advisory board facilitation
  - Mental Health LATAM: Asset prioritization model for >1,000 therapeutics
  - DARPA: Gene scoring model identifying top 20 targets
  - Myasthenia Gravis: Literature review + demographic trend dashboard

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### **Harvard Department of Chemistry and Chemical Biology – Research Assistant**

*2018 – 2022*

- Designed and executed experiments on microbiome–xenobiotic interactions.
- Analyzed 300+ biological samples weekly.
- Operated NMR, HPLC, LC-MS, and advanced culturing techniques.
- Delivered presentations and contributed to peer-reviewed publications.

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### **USC School of Pharmacy – Research Assistant**

*2016 – 2018*

- Studied the microbiome impact on alcohol consumption using mouse models.
- Collected, analyzed, and presented longitudinal behavioral and physiological data.
- Performed dissections and IHC analysis.

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## **SHADOWING & INTERNSHIPS**

### **Sharim MD Inc. – Medical Intern**

*2020*

- Observed internal medicine and cardiology procedures; prepared patient documentation.

### **Caspian Medical Clinic – Clinical Shadowing**

*2020*

- Assisted in patient interaction and diagnostic workflows.

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## **FELLOWSHIPS & HONORS**

- Microbial Sciences Initiative Fellowship (2019) – One of five awardees for interdisciplinary microbial research.
- Harvard College Research Program Fellow (Spring 2019, Summer 2019) – Funded independent research initiatives.

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## **PUBLICATIONS**

- Minwoo Bae et al. (Co-author). *Metatranscriptomics-guided discovery and characterization of a polyphenol-metabolizing gut microbial enzyme*. 2024.
- Sina Kiamehr. *Characterization of Microbial Hydrocaffeic Acid Dehydroxylase from Gordonibacter pamelaeae*. Bachelor's Thesis, Harvard College. 2022.
- Chip Le et al. (Co-author). *Emerging Chemical Diversity and Potential Applications of Enzymes in the DMSO Reductase Superfamily*. 2022.
- Sina Kiamehr. *Exploring Catechol Dehydroxylation in Microbes by Characterizing Hydrocaffeic Acid Dehydroxylase from Gordonibacter pamelaeae*. 2022.
- Vayu Maini Rekdal et al. (Co-author). *A widely distributed metalloenzyme class enables gut microbial metabolism of host- and diet-derived catechols*. *eLife Sciences*, 2019.