

SUMMARY

Experienced Software Engineer with a PhD in Computer Science and 6+ years of experience in mobile and embedded systems, microservice architectures, optimization algorithms, and a strong background in Java, C++, Python. Experienced in the full software development lifecycle, including end-to-end deployment to production environments and working with cross-functional teams. Skilled in distributed computing, REST APIs integration, CI/CD pipelines, and deploying scalable solutions on cloud platforms Google cloud.

TECHNICAL SKILL

Programming Languages: Java, C++/C#, Python, Kotlin, JavaScript, CSS, HTML, XML, Json, Ajax, jQuery

Framework: Flask, Spring Boot, Visual Studio, Android Studio, Eclipse, IntelliJ, PyCharm.

Cloud Platforms: Google Cloud, AWS.

API Development: REST API, Json, POSTMAN, Swagger, GraphQL.

Databases: SQL Server, SQLite, RDBMS, Cornerstone.

Dev tools: Git, GitHub, Gitlab, Docker, Gradle, Maven, Linux (Bash/shell script).

WORK EXPERIENCE

Software Engineer III, American Express

August 2024 – Present

- Designed and implemented backend Java REST APIs to track user offers and interactions, validating Kafka event publishing to the data warehouse with SQL.
- Built and deployed a Spring Boot scalable application to **Google Cloud platform** (GCP) using Pub/Sub and Bigtable in an event-driven, serverless architecture.
- Engineered and deployed an inner-source **Java** utility leveraging geospatial data of merchants to calculate day-hour segment, improving time calculation accuracy by **40%** and adopted company-wide.
- Resolved critical bugs in the nearby merchant offers API in Java, improving the accuracy of business rule implementation and boosting mobile app user engagement.
- Developed a custom asynchronous HTTP client to optimize **non-blocking** REST API interaction and improve backend service **response time** efficiency by around 180ms.
- Led a technical workshop on GCP serverless solutions, driving cloud adoption and best practices among engineering teams in American Express.

Graduate Research Assistant, Wayne State University, Detroit

August 2019 – January 2024

- Developed an **Android mobile framework** (Java/Kotlin) as a base for 3 projects **optimizing AI** and multimedia **performance** on mobile systems.
- Integrated Bayesian **optimization**, algorithms, data analysis, and **AI accelerators** (GPU, NPU) using **Java** and **Python** to relocate TensorFlow Lite tasks on resource constrained devices, achieving a **3.5x** improvement in response time and a **49%** enhancement in user experience.
- Employed machine learning methods and **optimization** algorithms for Android **Mobile Application Performance Optimization**, achieving a **16.5%** reduction in the mobile device energy usage and **60%** storage usage cut, surpassing existing schemes.
- Built Python-based utilities for autonomous system modeling, enabling 90%+ accurate prediction of user experience and power usage, and deep learning inference throughput.
- Enhanced profitability and task allocation rate of cloud sharing systems by **22.8%** and **25%** through designing a best-fit algorithm in **Java, Python** for optimized task distribution among resources.
- Improved mobile system **performance** through offloading and on-device optimization techniques, trading off between user experience and deep learning models response time **92%** of the time compared to other methods.
- Designed and implemented tooling for performance profiling and visualization, improving verification efficiency for edge-based AR applications
- Created an **autonomous Python tool** utilizing 3D graphic software (Blender) and mathematical models to predict user experience of virtual objects in augmented reality apps. (Available on GitHub).

- Authored 6 peer-reviewed papers on mobile computing, edge systems, and augmented reality, including publications in top venues such as IEEE Transactions on Mobile Computing and TPDS.
- Led research projects, mentored 10+ students in code reviews/software implementation for five years.

Software Engineer Intern, Motional Co., Pittsburgh

May 2022 - August 2022

- Developed a **web service** (frontend/UI and backend) using **Flask, Python, jQuery, JavaScript, HTML, CSS, and Docker** for analyzing and testing collected data from Hyundai vehicles.
- Implemented **SQLite database system**, and crafted **Queries** for autonomous vehicle data analysis.
- Developed **REST APIs** with **Swagger** facilitating connectivity between the web services.

Freelance Full stack developer

Jan 2024 - Feb 2024

- Developed a web service for retrieving healthcare information from PubMed website. A project assigned by Yale University using **Python, JavaScript, HTML, REST API**, and Docker in PyCharm.

Research Engineer, Wireless Networks lab, Shahid Beheshti University, September 2015 - January 2018

- Trained a data set of 600 students via **machine learning algorithms** SOM and LVQ for clustering and prediction of their grade in MATLAB. Achieved **88%** success in clustering and **78%** prediction accuracy.
- Implemented an IoT path recommendation system for fire incidents in smart buildings using object-oriented **Java**. Achieved a **20.5%** improvement in people's survival rate compared to similar systems.
- Designed a wireless system using SunSPOT sensors **Java** and conducted tests to analyze the impact of data perception, communication, transmission, and system architecture on overall energy efficiency.
- Collaborated on the design of an integrated architecture for smart university leveraging internet of things.
- Instructor of "Advanced Computer Networks" and "Cisco Packet Tracer for Network" labs.

Shahid Beheshti University – Undergraduate Projects

January 2012- January 2015

- Implemented an information and communication web service for *the computer engineering department of SBU*, Using **ASP.Net, C#, HTML, CSS, XML, JavaScript, and MS SQL Server**. This web enabled users to interact with each other using services such as data sharing, discussion rooms.
- Implemented, debugged, and tested many projects including Yahoo Messenger, Wikipedia, game apps, software design, relational databases, and web application using object oriented programming languages **C++, C#, ASP.NET**, and **SQL, Bootstrap**. These helped in advancing problem solving and analysis skills.
- Knowledgeable in **computer science fundamentals: data structures and algorithm design**.

EDUCATION

Wayne State University, MI

Doctor of Philosophy in Computer Science (GPA: 4/4)

August 2019 - January 2024

Shahid Beheshti University

Master of Science in Computer Engineering (GPA: 3.91/4)

September 2015 - January 2018

Shahid Beheshti University

Bachelor of Science in Computer Engineering, (GPA: 3.3/4)

September 2010 - January 2015

Areas Of Expertise

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|------------------------------|----------------------------------|-----------------------------|
| - Distributed Systems | - High-Performance Computing | - API Design and Testing |
| - Mobile/Web applications | - Data Structures and Algorithms | - Cloud computing platforms |
| - Microservice Architectures | - Object-Oriented Programming | |

HONORS & AWARDS

- Collaborated on an NSF proposal by conducting experimental data collection, which was subsequently awarded by the NSF career program around \$576k (*Sep 2019 - Jan 2024*).
- Rumble Fellowship award from Wayne State University (*Aug 2019 – Aug 2020*).