

Simarjeet Singh

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EDUCATION

Washington State University

January 2024 – May 2025

Master's in Computer Science - **GPA 3.91/4.0**

Coursework: Advanced Algorithms, Software Design & Architecture, Distributed Systems, Machine Learning, Computer Vision

JECRC University, Bachelor of Technology in Computer Science

August 2019 – May 2023

SKILLS

Languages: Java, C#, Python, JavaScript, C, C++, SQL, HTML/CSS

Frameworks: Spring Boot, .NET Core, PyTorch, TensorFlow, SKLearn, Pandas, Matplotlib, React, NodeJs

Developer Tools: Azure, AWS, GCP, GitHub Actions, MongoDB, MySQL, Docker, CloudFlare

EXPERIENCE

Software Development Engineer

January 2023 – December 2023

WinSun Green, Pune, India

- Developed Java Spring Boot based Wind Turbine data processing application to process and monitor data from 120+ wind turbines across 15 sites.
- Utilized InfluxDB for time-series data storage and analysis, enabling fault detection and operational insights for wind turbine.
- Used Azure Redis Cache to significantly reduce database load (upto 80%) and reduced latency by 60%.
- Created interactive UI components using React and Material-UI to visualize 8 KPIs, enabling real-time data monitoring and providing field engineers with insights into system performance.
- Developed a comprehensive test suite of over 80 unit and integration tests, integrated into a CI/CD pipeline, ensuring robust product reliability and quality.

Software Development Intern

May 2022 – August 2022

Cactus Communications LLC, Jaipur, India

- Developed RESTful APIs using Java Spring Boot for ingestion of academic publications and implemented search functionality allowing users to query research papers by keywords, authors, and custom filters.
- Optimized MongoDB queries through indexing and query restructuring, improving data retrieval speed.

PROJECTS

AgAid Digital Hackathon (Earned Honorable Mention) [\[Link\]](#) | *Python, PyTorch, React, Flask*

- Developed a Transformer Neural Network model to predict Snow Water Equivalent (SWE) with 92% accuracy, supporting data-driven water resource management decisions in the Western U.S.
- Preprocessed and integrated 9M+ rows of geospatial and meteorological data from 8 unstructured datasets, leveraging chunked loading, spatial joins, and KNN imputation to enhance data consistency and model accuracy.
- Engineered and deployed a full-stack web application with React & Flask, allowing users to upload CSV files and generate real-time SWE predictions with interactive data visualizations.
- Earned Honorable Mention, ranking in top 3 for innovative AI-driven prediction system.

FlavorBlend (CrimsonCode'25 Hackathon Winner) [\[Link\]](#) | *Python, Flask, JavaScript, Node.js, Express.js*

- Built an AI-powered fusion recipe generation app in 24 hours, utilizing LLMs like Meta Llama 3-8B Instruct for text generation and Stability AI Stable Diffusion XL Base 1.0 for image generation, providing real-time recipe creation.
- Implemented a Node.js and Express.js backend for handling user inputs, generating fusion recipes, and managing data storage with MongoDB, while integrating Firebase authentication for secure, real-time sharing.
- Developed a Flask web app with HTML, CSS & JavaScript, ensuring accessibility on both web & mobile devices.
- Added Firebase authentication and real-time sharing to enable secure recipe generation and cross-platform sharing.

Media Sharing Service [\[Link\]](#) | *C#, .NET Core, Redis, OAuth, Azure*

- Developed a media-sharing application using C# and .NET 7 on Azure Function Apps, enabling users to upload, download, and manage media files stored in Azure Blob Storage.
- Implemented secure user authentication using Google OAuth, ensuring robust access control and enhanced data privacy.
- Created and maintained end-to-end CI/CD pipelines to automate build and deployment processes, ensuring seamless updates.
- Optimized application performance by integrating Redis Cache for efficient URI storage and a CDN for video streaming.

Music Recommendation System & Spotify Data Analysis [\[Link\]](#) | *Python, scikit-learn, Spotipy, Matplotlib*

- Developed a music analysis and recommendation system by integrating Spotify API and a 160K-track dataset to deliver personalized song suggestions.
- Applied network analysis, machine learning (KMeans, PCA), artist transition networks and community detection on 10K+ personal streaming tracks to uncover listening patterns and top artists.
- Engineered a hybrid recommendation engine with 95% accuracy, optimizing feature pipelines and visualizing insights through 20+ interactive plots.

CERTIFICATIONS

Certification: Architecting with Google Compute Engine [\[Link\]](#)

Certification: Google Cloud Fundamentals - Core Infrastructure [\[Link\]](#)