Spoorthi Subramanya Bhat

774-704-0760 | spoorthibhat09@gmail.com | portfolio | linkedin | github

Skills

Software Development: Jetpack Compose, Compose Multiplatform, MVVM, Retrofit, Hilt, WorkManager, Jetpack Navigation, Firebase Realtime Database, Room, Ktor Server, Spring Boot, SQLite, MySQL, Firebase, MongoDB

Languages: Kotlin, Java, Python, js | **ML:** PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, NLTK, SpaCy, BERT, d3.js

Education

University of Massachusetts, Dartmouth, MA Sept 2023 – Present
Master's in Computer and Information Science | GPA: 4.0/4.0

Experience

Graduate Student Assistant, University of Massachusetts – Dartmouth, MA January 2024 – Present

- Designed and developed a mobile application for a university-led substance use recovery program, enhancing usability, streamlining navigation, and boosting user engagement by 80% across 150+ active users using Jetpack Compose and MVVM.
- Improved CWE classification accuracy by 22% on 12k+ NVD records using BERT and custom NLP preprocessing; also developed a sonar signal classifier with FFT and ML models, achieving 87% accuracy.
- Served as a Teaching Assistant for Object-Oriented Programming (Java) and Theoretical Computer Science, mentoring students.

Software Engineer, In Time Tec – Bangalore, India March 2022 – August 2023

- Developed a secure Android SDK for Equifax Inc. to capture device and behavioural data (sensor activity, location data) for fraud analytics, deployed in 100K+ production devices with support for Kotlin, Java, and cross-platform frameworks.
- Boosted bot detection accuracy by 25% by enabling real-time data flow for AI/ML-based fraud detection models, while reducing integration issues by 40% through modular SDK architecture and comprehensive client-facing documentation.
- Built scalable backend features for an e-commerce mobile app, reducing API call redundancy by 30% via smart caching and enhancing session security through encrypted local storage and secure token handling.
- Automated backend workflows using SQL triggers and stored procedures. Improved query performance by 20% and significantly reduced manual interventions in routine data operations.

Projects

ReLeaf – Android Application for Substance Use Disorder | *Kotlin, Jetpack Compose, Firebase, Room Database*

- Built an end-to-end Android app using Jetpack Compose, Room, and MVVM architecture to support goal tracking, daily check-ins, and journaling for SUD patients, with offline functionality and real-time sync via Firebase.
- Implemented push notifications, encrypted local storage, and secure authentication flows to improve user retention, ensure data privacy, and comply with healthcare security requirements.

Personal Expense Manager – Full Stack Web Application | *Spring Boot, JavaScript, MongoDB, REST APIs, HTML/CSS*

- Designed and developed a full-stack expense manager with Spring Boot (REST APIs), JavaScript frontend, and MongoDB backend, supporting multi-account tracking and CRUD operations.
- Applied NoSQL schema design in MongoDB to manage user-account-expense relationships efficiently.
- Implemented secure session-based authentication, modular dashboard components, and client-side search/filtering to enhance usability and system scalability.

Sports Management Client-Server Application | *Java, Socket Programming, Multi-threading, JSON, MySQL*

- Built a Java-based client-server system using socket programming for real-time sports team and game management.
- Developed a multi-threaded server with JSON-based communication and MySQL integration for persistent data handling.

Automated Medical Coding Using Hybrid Decision Trees - Master's Thesis | *Python, Scikit-learn, LSTM, GPT-4, MIMIC-IV*

- Designed and implemented a hybrid decision tree classification pipeline combining rule-based decision trees and LSTM models to automate ICD code prediction, reducing inference time by 38% on clinical discharge summaries.
- Achieved a 17% improvement in multi-label classification accuracy over deep learning-only and full rule-based baselines by applying hierarchical modeling and leveraging GPT-4 for semantic sentence extraction.

Publications

Spoorthi Bhat, Haiping Xu, Joshua Carberry. *Automated Medical Coding Using a Hybrid Decision Tree with Deep Learning Nodes*, submitted to **IEEE CISOSE 2025**. *(Status: Accepted for publication)*.

H.A. Chaya Kumari, **Spoorthi S. Bhat**, M. Sucharith, T.S. Pooja, B.C. Thanmayi. *Indoor Navigation Using BLE Beacons*, in *Recent Trends in Computational Sciences*, 1st Edition, CRC Press, 2023. ISBN: 9781003363781. [Link]

Awards: FUCHS Intelligent Data Discovery Hackathon 2024 - Won the 'Most Impactful Solution' and 'Best Machine Learning Technique' awards ($500 total)