

# Deepanjay Nandal

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## Education

### Arizona State University

*Masters of Science in Computer Software Engineering*

**August 2024 - May 2026**

Arizona, USA

### Vellore Institute Of Technology

*Bachelor of Technology in Information Technology*

**July 2017 - July 2021**

Tamil Nadu, India

## Technical Skills

**Programming Languages:** Java, Python, C++, JavaScript, Dart, TypeScript, SQL, Bash

**Mobile & Web Development:** Flutter, React, Next.js, Tailwind CSS

**Backend Development:** Java Servlets, JDBC, Flask, Node.js, Express.js, REST APIs, JWT Authentication

**Security & Reverse Engineering:** Android Security, AOSP, Frida, Ghidra, ClusterFuzz, Assembly Analysis, Static/Dynamic Analysis

**Testing & Automation:** AndroidJUnitRunner, JUnit, UIAutomator, Tradedef, memutils, Logging, Triage Reports

**Tools & Platforms:** Git, Android Studio, ADB, IDA Pro, Visual Studio Code, IntelliJ, Eclipse, Postman, Xcode, Putty

**Databases & Data Tools:** MongoDB, SQLite, Firebase, Pandas, NumPy, Scikit-learn, SPARQL

**Cloud & DevOps:** Vercel, Microsoft Azure, Docker, GitHub Actions, CI/CD Fundamentals

**Software Architecture:** Clean Architecture, Repository Pattern, Provider Pattern, SOLID Principles

**Additional:** WebRTC, OAuth2.0, RBAC, Sentry, Secure Storage, Responsive UI Design

## Experience

### Ittiam Systems Pvt Ltd

*Senior Software Engineer*

**March 2022 – June 2024**

Bangalore, India

- Spearheaded the development of 40+ Compatibility Test Suites (CTS) for Google's Android Security Test Suite, integrating into AOSP and ensuring vulnerability patch validation.
- Introduced reverse engineering workflows using Ghidra and Frida, increasing bug identification by 150% and enabling dynamic inspection of previously inaccessible vulnerabilities.
- Automated crash reproduction and triage workflows using ClusterFuzz and Python, reducing duplicate crash submissions and improving triage efficiency by 75%.
- Designed and implemented memutils for out-of-memory error detection, expanding test coverage and earning recognition with a "Best Employee" award.
- Produced detailed triage reports with clear control flow and insights for over 50 bugs, expediting patch verification cycles.
- Analyzed Assembly Code from OEMs (Lenovo, Samsung, Asus) as part of Google's Build Test Suite to assess patch status and accelerate partner security updates.

### Accenture

*Associate Application Developer*

**November 2021 – March 2022**

Pune, India

- Completed Java training covering OOP, database connectivity, and concurrency using real-world simulations.
- Built a login and access-control module using Java, Servlets, and JDBC during an Agile sprint.

## Projects

### CaseTally – Cross-Platform Secure Communication Platform for Legal Use Cases

- Built secure real-time P2P video and chat using WebRTC with QR-based ECDH key exchange, XChaCha20 encryption, and offline-ready messaging.
- Designed a signaling protocol enabling persistent sessions, peer reconnection, and offline caching with sync-on-reconnect.
- Implemented role-based contact and session lifecycle control using the Repository Pattern with Provider, leveraging Clean Architecture and modular dependency injection for scalability and maintainability.
- Developed backend with Flask and MongoDB, applying JWT authentication and encrypted client-side data handling using secure local storage.
- Enabled runtime observability and real-time error tracking via Sentry, integrated with structured logs and crash reports.
- **Skills:** Flutter, Dart, Flask, WebRTC, MongoDB, JWT, Sentry, Clean Architecture, Provider, Secure Storage, XChaCha20, ECDH

### Nutritional Calculator Web App

- Designed full-stack app for real-time nutrition analysis via SPARQL-backed knowledge graph.
- Leveraged semantic search and RDF mapping via Node.js backend with SPARQL endpoints.
- Delivered responsive, low-latency UI with Next.js, Tailwind CSS, async APIs, and non-blocking data flows.
- **Skills:** Node.js, Next.js, Tailwind CSS, SPARQL, Semantic Web, REST APIs, Vercel