

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: 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, VS Code, IntelliJ, Postman, Xcode **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

- Built and maintained over 40 Compatibility Test Suites for Google's Android Security Test Suite, integrating them into AOSP to help validate security patches and ensure compliance.
- Introduced reverse engineering workflows with Ghidra and Frida, increasing bug identification by 150% and enabling dynamic inspection of previously inaccessible vulnerabilities.
- Automated crash reproduction and triage scripts using ClusterFuzz and Python, reducing duplicate crash reports by 75% and accelerating patch analysis.
- Designed and implemented memutils for out-of-memory error detection, expanding test coverage and earning recognition with a "Best Employee" award.
- Wrote triage reports with control flow breakdowns and insights for over 50 bugs, helping accelerate patch verification.
- 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.
- Assisted with feature rollouts and integration while contributing to Git workflows and code reviews during Agile sprints.

Projects

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

- Developed a privacy-focused real-time video and chat system over WebRTC, linking QR-based ECDH key exchange and XChaCha20 encryption with offline messaging support.
- Created a lightweight signaling protocol to support persistent sessions, reconnections, and offline message queuing with sync-on-reconnect.
- Structured contact and session lifecycle logic around role-based access control with the Repository Pattern and Provider, following Clean Architecture principles to improve modularity and testability.
- Built the backend with Flask and MongoDB, applying JWT authentication and encrypted client-side data handling through protected local storage.
- Enabled runtime observability and real-time error tracking via Sentry, connected to structured logs and crash reports.
- Skills:** Flutter, Dart, WebRTC, Flask, MongoDB, JWT, XChaCha20, ECDH, Provider, Sentry, Secure Storage

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