

# Shantanu Ramanujapuram

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## Experience

### Paid Project Intern | Indira Gandhi Center of Atomic Research | Hybrid

Feb 2024 – July 2024

- Developed a full-cycle prototype of an **IoT Smart Energy Meter**, encompassing design, hardware fabrication, and functional implementation
- Architected a **low-bandwidth data transmission network layer** using **GSM/GPRS** over 4G, **reducing bandwidth usage by 99%** while ensuring **65% higher reliability** in remote locations.
- Engineered and wrote comprehensive **full-stack** data management solution using **Express.js**, **React**, **Next.js**, and **React Native**, with **MySQL** database integration

### Software Development Engineering Intern | Baton Systems Ltd | Onsite

June 2024 – July 2024

- Integrated the **node registration** process for the **Core Forex** settlements team's **notarization service** into the admin dashboard, improving system efficiency and reliability
- Implemented comprehensive **unit testing** across multiple microservices using **JUnit5**, enhancing code quality and system robustness
- Gained expertise in **test-driven development** (TDD) and high-level architectural design of web services using **Java** and **Spring Boot**

## Projects

### Sentinel Smart Wearable | *MicroPython, NodeJS, React Native, Embedded-C*, Raspberry pi Pico

January 2024

- Developed and built an innovative **IoT smart wearable** voice assist device for visually impaired individuals
- Performed AI frame analysis using **MobileNet** and **Edge Impulse**, achieving a **97.5% reduction** in object detection response time from **2000ms** to **50ms**.

### Paradox Mobile Clients | *React Native, TypeScript, Expo*

April 2024

- Developed **custom android apps** for **event registration** and **accommodation management** at **IITM Paradox**
- Streamlined event registration, **reducing processing time** by **99.7%** (from **30 seconds** to **less than a second**)
- Supported volunteer management for an event with **over 7,000** student participants.

### Multi-Terrain Hexapod Robot | *C++, NodeJS, Python, Electron*

September 2024

- Designed and built advanced **robot telemetry systems** utilizing **LoRa WAN**, **TCP**, and **UDP** communication protocols to enable **robust data transmission** and remote connectivity
- Developed a comprehensive control system including an **Electron application** and a full-featured **REST API** to facilitate seamless **system integration** and **robotic control**
- Top 20 Finalist** in India at AICTE ARM Inventors Challenge 2024; Winner of the Robotics Category at SaRaM 2025.

## Technical Skills

**Languages:** JavaScript, TypeScript, Python, C#, Java, C/C++

**Web Development:** React.js, React Native, Express.js, Flask, Spring Boot, RESTful APIs, GraphQL

**Databases:** MySQL, MongoDB, PostgreSQL

**Scripting/DevOps:** Bash, Batch, PowerShell, Git, Docker, GitHub Actions

## Education

### IIT Madras BS Degree | Remote | CGPA: 7.66

June 2022 – Present

- Foundational course in Data Science | June 2022 – December 2023
- Diploma in Data Science | January 2024 – Present
- Course Work: Machine Learning, Business Data Management, Database Management Systems

### SRM IST Ramapuram | Chennai, Tamilnadu | CGPA: 9.48

August 2022 – Present

- Electronics and Communications Engineering

### The PSBB Millennium School Gerugambakkam | Chennai, Tamilnadu

June 2007 – June 2022

- Computer Science and Mathematics | **AISSE: 465/500** | **AISSE: 449/500**