

# Arnav Bansal

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## EDUCATION

### University of Illinois Urbana-Champaign

Bachelor of Science in Computer Science

Champaign-Urbana, IL

Aug. 2025 – May 2029

## EXPERIENCE

### Software Engineering Intern

Mar 2024 – Oct 2024

InfoEdge India Pvt. Ltd.

Delhi, India

- Worked on a career counseling platform using **React** and **Next.js** with Server-Side Rendering
- Built a context-aware AI chat system by persisting user history and injecting **personalized context** into system prompts
- Designed and implemented a **semantic summarization** algorithm to reduce token usage by **80%** while maintaining consistent response quality

### Software Engineering Volunteer

Aug 2023 – Dec 2023

Saarthi Education

Delhi, India

- Architected an automatic grading system using **Python** and **OpenCV** for primary school math worksheets
- Implemented an image pre-processing workflow with **perspective correction** and **region-of-interest segmentation** to isolate handwritten answers before digitizing them with **Tesseract OCR**
- Built a **React dashboard** to allow teachers to easily track scores for each student

## PROJECTS

### Cyclr | React Native, Node.js (Elysia), PlatformIO (C++), PostgreSQL

2025

- Engineered a **full-stack** bike sharing platform with a custom-built **IoT smart lock**
- Designed a secure **BLE (Bluetooth Low Energy)** communication method with **GATT Characteristics** to interface mobile app with physical **ESP32s**
- Implemented a **Challenge-Response authentication** mechanism with **HMAC-SHA256** and random nonces to securely lock and unlock bikes
- Developed the mobile app with **React Native** and backend server with **Elysia.js**

### Canvas to Notion Exporter | SvelteKit, ICS, Notion API

2025

- Developed a web tool using **SvelteKit** to export Canvas LMS assignments to a user-owned Notion Database
- Engineered an **ICS Parser** to consume read-only calendar feeds from Canvas and serialize raw event data into **JSON** compatible with the **Notion API**
- Integrated Notion **OAuth** to allow users to provide access to specific pages or databases

### Arcula | React, Nextjs, Express, MongoDB, SMTP/IMAP

2024

- Developed a full-stack platform using **React** and **Node** to generate email addresses to mask real identities
- Built a custom **Email Server** with **TypeScript**, handling MX Records and **DKIM Verification**
- Built a companion **Chrome Extension** to autofill credentials directly into browser fields

### Upright | Arduino (C), Flutter

2023

- Engineered a wearable posture-detection device with haptic feedback, utilizing accelerometer data to detect deviation
- Built a **Flutter** mobile application communicating via **Bluetooth** to visualize historical posture data and track improvements over time
- Selected as one of the top 30 most innovative projects in India (out of 10,000+ entries).

### Smart Jab | React, Flutter, Python, CoWIN API

2022

- Developed a COVID-19 Vaccination slot finder using **React** and **Flutter**, serving **100,000+ users**
- Wrote a **Python script** to monitor public government APIs and update our databases in near real time
- Project was featured in **national news outlets** for its social impact during the pandemic

## TECHNICAL SKILLS

**Languages:** JavaScript/TypeScript, C, C++, Python, Go, Rust, Dart, HTML/CSS, Kotlin

**Frameworks:** React/Next, Node.js, Flutter, React Native, Android Native, Pandas, Numpy, OpenCV

**Miscellaneous:** Git, Docker, SQL, MongoDB, GraphQL, REST, Arduinos, IoT