

# Arnav Malhotra

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## EDUCATION

### York University

*Bachelor of Engineering in Computer Engineering*

Toronto, ON

May 2027

## EXPERIENCE

### Research Fellow

May 2024 – July 2024

*Indian Institute of Technology, Roorkee*

- Researched hybrid BCos-KAN architectures to improve image segmentation accuracy while enhancing model interpretability.
- Built interpretable EEG-based pipelines for seizure detection, improving transparency of ML-driven clinical insights.
- Designed lightweight CNN-transformer models for mobile image enhancement, achieving DSLR-quality output with reduced model size.

### Software Development Intern

July 2024 – Sept 2024

*Parcon India Private Limited*

Kolkata

- Faced with repetitive manual workflows in invoice and delivery order handling; proposed and developed automation solutions.
- Created C and Python scripts integrated with Excel and ERP systems to auto-sign and upload documents.
- Reduced back-office errors by 80% and saved 90+ hours per week across the admin team.

## PROJECTS

### OneTimeTable | *FastAPI • MongoDB • Next.js*

Jan 2025 – Present

- Faced with disorganized course schedules and fragmented academic planning, took initiative to design a unified dashboard for students.
- Developed a full-stack web app that parses timetables and syllabi using OpenRouter-driven LLM pipelines, converting them into structured class, assignment, and exam data.
- Built a companion Chrome extension to provide real-time class and deadline previews directly in-browser, with seamless auth and backend sync.
- Implemented Redis-based caching for fast access and enabled PDF, CSV, and ICS export features for personal and calendar integrations.
- Deployed publicly, onboarding 50+ students across 4 universities in the first month.

### INeedHelpYorkU | *React • FastAPI • PostgreSQL • JWT Auth*

Oct 2024 – Dec 2024

- Recognized widespread unawareness of student support services and initiated development of a centralized web platform to address this issue.
- Designed and implemented a full-stack system allowing students to browse, suggest, and categorize 80+ academic, financial, and wellness resources.
- Built secure login with JWT authentication, an admin dashboard for approving suggestions, and a tagging system for searchability using PostgreSQL schemas.
- Promoted through campus forums and Discord communities, resulting in 1000+ page visits and 50+ recurring users within two months.

### York University Calendar Project | *FastAPI • React • MongoDB • Selenium*

Oct 2024 – Present

- Partnered with Prof. Pooja Vashisht to create a diversity calendar showcasing religious and cultural events across the academic year.
- Automated scraping of 10+ sources and leveraged Gemini for AI-generated event descriptions, cutting content creation time by 85%.
- Deployed tool adopted by 200+ faculty and staff for scheduling and awareness initiatives.

## TECHNICAL SKILLS

**Languages:** Python, C, JavaScript

**Frameworks:** FastAPI, MongoDB, PostgreSQL, JWT Auth, OpenRouter API, Next.js, React

**Developer Tools:** Selenium

**Libraries:** PyTorch, NumPy, Matplotlib, CNNs, Redis