Aarav Modi

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EDUCATION

University of Waterloo
Sept 2024 - May 2029
Bachelor of Applied Sciences in Systems Design Engineering
Waterloo, ON

EXPERIENCE

IT Project Coordinator
Jan 2025 – Present
Canadian Imperial Bank of Commerce (CIBC)
Toronto, Canada
- Coordinated with Application Development (AD) and Application Operations (AO) teams on the **Cloud@Scale** initiative, supporting the phased migration and decommissioning of **400+ on-premise applications** to **Microsoft Azure** over a 5-year roadmap.
- Developed a fully automated **Excel VBA triage tracking tool**, reducing manual reporting time by **30%** and doubling escalation efficiency across engineering and operations teams, along with saving **20+** hours of work.
- Supported cross-functional cloud projects with funding up to **$3M**, aligning migration schedules with financial forecasts and resourcing plans using **JIRA, Confluence**, and Microsoft Power tools.

Engineering and Research Intern
May 2024 – August 2024
Design TWG (Interior Design and Architecture)
Mississauga, ON
- Supported office operations by organizing project documentation, coordinating with suppliers, and assisting the design team on active builds.
- Conducted market research using municipal zoning and demographic data to help identify **franchise opportunities** with high turnover potential.
- Shadowed a **structural engineer** on-site to gain hands-on experience in evaluating foundation design, load distribution, and construction feasibility.
- Assisted in reviewing design plans and verifying code compliance by cross-referencing **AutoCAD** files with local building regulations.

PROJECTS

Math Video Search Engine | *Python, Flask, YouTube API, Elasticsearch*
Feb 2025 – Present
- Built an **AI-powered search engine** to help students find relevant math tutorials using semantic query enhancement with **sentence-transformers**.
- Reduced search time by **40%** and latency to ¡**100ms** using **Elasticsearch** indexing on 10,000+ YouTube video entries.
- Analyzed metadata, transcripts, and tags to boost ranking accuracy; integrated with a **Flask API** and responsive Next.js frontend.
- Tested with **5 high school students**; led to a **15% grade improvement** and **3x more** independent study sessions.

Weather App | *React, Node.js, JavaScript, HTML, CSS*
Jan 2025
- Developed a real-time weather app with **95% location accuracy** using geolocation and IP fallback; supported **live + historical data**.
- Designed a responsive React UI, reducing bounce rate by **40%**; added smart loaders and error handling for **99.9% reliability**.
- Optimized a Node.js backend with caching and throttling, cutting API response time by **60%** and improving performance at scale.

Living In Healthy Space – NASA Design Challenge | *Blender, Python, NumPy, Pandas*
May 2024
- **Grand Prize Winner** out of **4,000+** international teams from **12+** countries in a **NASA-sponsored** global challenge; presented our orbital Europa colony concept in **Los Angeles** and received a **$2,500** scholarship.
- Built **data-driven ecosystem simulations** in Python using real astrobiological datasets; validated habitat viability and population sustainability.
- Designed a **cinematic-quality 3D model** of the colony in Blender, showcasing modular design and advanced life-support infrastructure.

TECHNICAL SKILLS

Technologies: Python, Java, JavaScript, React, Next.js, Node.js, Flask, HTML/CSS, Git, Elasticsearch, sentence-transformers, pandas, NumPy, VBA, Excel, MATLAB