

Eshaan Mehta

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Education

University of Waterloo

2022 - 2026

Bachelor of Computer Engineering, Specialization in Artificial Intelligence

GPA: 93%

- **3x Dean's List** recipient for **top 10%** academic average amongst all computer engineering students.
- Selected as **1 of 10 students** in the entire school for outstanding academic averages to pilot a course on ASIC chip design.
- **2x Winner** at Toyota Computer Vision & Robotics Hackathon receiving *Most Unique Solution* and *Best Engineering Design* awards.
- **Relevant Coursework:** Data Structures & Algorithms, Systems Programming, Computer Architecture, Discrete Math

Technical Skills

Languages/Technologies: Python, TypeScript, JavaScript, SQL, C, C++, C#, Java, Terraform

Libraries/Frameworks: Node.js, Express.js, React.js, Fast API, Flask, Next.js, Pandas, Pytorch, Tensorflow, Langchain, YoloV8, OpenCV,

Tools: Git, GitHub, Elasticsearch, RabbitMQ, Jenkins, Postman, MySQL, ChromaDB, MongoDB, Redis,

Cloud: Docker, Kubernetes, AWS, OCI, OKE

Experience

RedIron Technologies

May 2024 – Present

Software Engineer

Toronto, ON

- Fully owned the proposal, development, and launch of a **RAG** chatbot utilizing **OpenAI API**, **Elasticsearch**, providing an intuitive way to understand company documentation and product. Adopted by **5+** internal teams with public launch projected to generate **\$50K+ ARR**.
- Automated end-to-end **OCI** deployments via **Terraform**, **Kubernetes**, streamlining provisioning, VCN configuration, clusters, node pools. Integrated **CI/CD pipelines**, NuGet package management with **Jenkins**, altogether resulting in a **35% reduction** in deployment times.
- Optimized application scalability during high traffic by **over 20%**, via **MySQL** database query overhaul, architectural redesign and strategic infrastructure scaling. Leveraged load balancing and **Redis** caching, thus reducing latency and improving response times by **500ms**.
- Engineered efficient data export capabilities, allowing users to download large volumes of data in JSON, and CSV formats. Optimized file and binary data streaming, reducing export times by **30%**.
- Co-led a redesign of **7 key** frontend components, enhancing user experience, thus improving product marketability and driving **\$300,000** in sales from numerous customer-facing demos.
- Architected scalable microservices, enabling the processing of over **10 TB** of data, scheduling background jobs and providing real-time status updates, enabling customers to search for key insights over data.
- Collaborated with cross-functional teams using **Agile methodologies** to integrate features, align business goals, and ship in short sprints.

City of Mississauga

Sep 2023 – Dec 2023

Data Analyst

Mississauga, ON

- Overhauled multiple company tools by optimizing database queries and performing rigorous data transformations, resulting in **60% reduced memory usage** over **20+ GB** of data, and facilitating data analysis/visualization.
- Automated report generation for utility data of **100+ city buildings**, incorporating comprehensive data visualization, and validation, thus providing enhanced insights of energy and power consumption.
- Initiated custom macros in Excel, optimizing data retrieval, manipulation, and formatting, saving **1+ hour** of daily manual work.

Projects

UW Pinned | *React.js, Node.js, Express.js, MongoDB, Typescript, Docker, Clerk, ImageKit, Tailwind CSS*

- **Led a team of 4 developers** in creating a platform for students to connect with and comment on clubs, aiming to streamline club marketing, engagement and expand outreach.
- Conducted market research and pitched platform at clubs' fair gathering key insights into product direction, thus resulting in the successful launch with **100+ clubs** and **30+ beta users**.
- Implemented robust authentication pipeline with **email verification** and **2FA**, eliminating spam accounts, addressing key security issues.
- Reduced server load by **40%** and improved page load times by leveraging ImageKit API for high-quality image delivery, CDN integration, lazy-loading, and caching.
- Oversaw the entire development lifecycle, ensuring smooth project delivery through task delegation, and effective project management.

Citadel Summer Invitational Hackathon 2024 | *Python, Pygame, Java*

- Selected as one of 150 students out of 2000 applicants in Canada and USA, placing **top 25**, in creating an AI bot to play a 1v1 tower defense game, earning **\$1000** in prizes.
- Developed heuristic based prediction model to determine optimal attack utilizing previous attack metrics and scoring-based analysis of opponent's playstyle, resulting in a **90% success rate** in attacks.
- Streamlined the iteration process by scraping game logs of **200+ test matches** from the game engine API, saving **1+ hour daily** of manual video review and match analysis
- Reverse-engineered the game engine to simulate rounds frame-by-frame with a full GUI, allowing for more extensive bot testing, uncovering edge cases and potential weaknesses.