

# Kanishk Ashra

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## EDUCATION

### University of Alberta

Bachelor of Science in Computer Science

Edmonton, AB

Sept. 2022 – Dec. 2026

## PROJECTS

### Aura Farming — AI-Powered IoT Irrigation — *NaTHacks 2025 Winner*

Nov 2025

GitHub: [ashra1-ai/Aura-Farming](https://github.com/ashra1-ai/Aura-Farming)

- Built a **multi-zone IoT irrigation system** using ESP32 boards to collect 5k+ soil moisture and rainfall telemetry points in real time.
- Designed automated irrigation logic with **servo-controlled sprinklers**, reducing manual adjustments by **60%**.
- Architected a **Supabase-backed pipeline** for telemetry storage, device commands, and real-time triggers.
- Developed **React dashboards** and **Django APIs** for live monitoring, threshold configuration, and override controls.

### Conditional Generative Adversarial Network (CGAN) — MNIST Dataset

Sep 2025 – Oct 2025

GitHub: [ashra1-ai/cgan-mnist](https://github.com/ashra1-ai/cgan-mnist)

- Implemented a **Conditional GAN** in PyTorch to generate class-conditioned handwritten digits with stable training across 60+ epochs.
- Improved generator convergence using label embeddings, tuned loss functions, and discriminator regularization.
- Conducted **latent-space analysis** to visualize class-vector influence on generative behavior and diversity.

## EXPERIENCE

### Software Engineering & Automation Intern

Apr. 2025 – Aug. 2025

University of Alberta - Residence Services

Edmonton, AB

- Automated facility workflows using **Python**, **AD logs**, and **REST APIs**, eliminating **70%** of manual processing.
- Developed dashboard pipelines with **Pandas** and **Plotly** to monitor uptime, incident patterns, and maintenance KPIs.
- Built automation scripts to classify, route, and resolve recurring incidents, improving ticket accuracy by **30%+**.
- Standardized SOPs, compliance workflows, and documentation across 40+ buildings for audit readiness.

### Technical Support Analyst

Feb. 2025 – Apr. 2025

University of Alberta Students' Union

Edmonton, AB

- Diagnosed **200+** support issues using system logs, diagnostics tools, and endpoint performance metrics.
- Configured secure workstation environments with **endpoint protection**, network policies, and user access controls.
- Developed technical SOPs and troubleshooting guides, improving operational consistency and onboarding.

### Software Developer

Oct. 2024 – Jan. 2025

Enactus Canada (UAlberta)

Hybrid

- Built **TensorFlow-based recommendation pipelines** using embeddings and user interaction data.
- Integrated **Stripe API**, optimized SQLite caching, and improved backend I/O throughput.
- Enhanced React frontend performance by profiling bottlenecks and optimizing **state management**.

### Mathematics Instructor

May 2023 – Sept. 2023

UCMAS Canada

Edmonton, AB

- Used dashboards and **performance analytics** to personalize learning for 100+ students.
- Designed structured **problem-solving modules** improving speed, accuracy, and retention.
- Automated weekly academic reporting workflows, reducing manual effort.

### Math & Science Tutor

Oct. 2022 – Apr. 2023

Oxford Learning Centres Inc.

Edmonton, AB (Hybrid)

- Built personalized study plans using **assessment data** and progress analytics.
- Implemented STEM simulations and visual demonstrations to enhance conceptual understanding.
- Provided technical support for digital learning tools and remote-learning systems.

## CERTIFICATIONS

- Mathematics for Machine Learning and Data Science — DeepLearning.AI (Nov 2025)
- Generative Adversarial Networks (GANs) — DeepLearning.AI (Oct 2025)
- Google Advanced Data Analytics Professional Certificate — Google (Oct 2025)
- Google Cybersecurity Professional Certificate — Google (Jan 2025)

## TECHNICAL SKILLS

- **Languages:** Python, SQL, PowerShell, Java, JavaScript (React), Dart (Flutter)
- **ML/AI:** TensorFlow, PyTorch, Scikit-learn, OpenAI API
- **Data Tools:** Pandas, NumPy, Matplotlib, Seaborn, Plotly