Shane Koester (Open to relocation)

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PROFESSIONAL SUMMARY

- Software Engineer with an Advanced Diploma in Software Engineering Technology – Artificial Intelligence and 3+ years of experience building full-stack web applications, enterprise tools, and process automations
- **Languages:** Java, Python, C#, C++, SQL, GLSL, TypeScript, JavaScript
- **Frameworks & Libraries:** React.js, .NET, TensorFlow, PyTorch, OpenGL, LWJGL, NumPy, Flask

RELEVANT WORK EXPERIENCE

Software Engineer | Ontario Power Generation – Nuclear Oversight | Pickering, ON **Sept. 2024 – Present**

- Leading development of a company-wide platform that consolidates existing applications, dashboards, and future projects into one website, built with **React.js**, **TypeScript**, and the **Microsoft Graph API**
- Built the NOS Proficiency Heatmap, a web app grading auditor proficiency across 40+ OPG programs from audit history, field observations, training, and experience to find training gaps and guide hiring
- Created an application that streamlines communication between auditors and line organizations, with automated emails, non-compliance response forms, and Microsoft approvals
- Automated the team's monthly reporting with **Power Automate**, saving days of labor each month

Web Developer Intern (Co-op) | Mind By Design | Toronto, ON **Jan. 2024 – Apr. 2024**

- Developed the company website alongside a team of developers, contributing to both the frontend and backend
- Used GoHighLevel to implement a responsive design and ensure cross-browser compatibility

PROJECTS

Interactive 3D Game Engine **Java, LWJGL, OpenGL, GLSL**

- Built a 3D game engine from scratch in Java with LWJGL and raw OpenGL: custom GLSL shaders, per-pixel multi-light lighting, and a five-pass renderer with real-time shadow mapping, HDR bloom, and tone mapping
- Rendered reflective, refractive water with Fresnel blending and depth-based color over procedurally generated, blend-mapped terrain, with wind-animated foliage and GPU-instanced particles
- Added ray-cast mouse picking, a live Swing scene editor, an OBJ model loader, and an ffmpeg video recorder

AI Learns to Drive **JavaScript, HTML Canvas – No Libraries**

- Developed a self-driving car simulation with a neural network written from scratch, where 300 cars per generation learn in a hands-off training loop by copying the ten best drivers with small random changes
- Designed scoring rules that reward passing traffic instead of following it, ran hundreds of generations to find which rules taught fastest, and tested trained brains on 100 unseen layouts

Optical Character Recognition **Python, NumPy, Flask**

- Implemented a neural network from scratch in NumPy (backpropagation, SGD, softmax, and cross-entropy) and trained it on 60K MNIST images, reaching 97.5% accuracy on the 10K test images
- Deployed it as a Flask web app on Render, where users draw a digit and see live predictions for all ten digits

EDUCATION

Software Engineering Technology – Artificial Intelligence (Advanced Diploma) **Graduated Apr. 2026**
Centennial College, Toronto, ON

- AI/ML: Supervised, Unsupervised & Reinforcement Learning, Neural Networks, Deep Learning, NLP & Recommender Systems, MLOps, Cloud ML
- Software: Full-Stack Web Development, Data Structures & Algorithms, SQL/NoSQL Databases, Mobile Apps