Rudraksh Monga

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EDUCATION

University of Toronto — Sep 2021 – May 2026
BSc. in Computer Science; Minor: Maths, Stats; CGPA: 3.91/4.00 — *Toronto, Ontario, CA*
Relevant Courses: ML/AI, Data Structures, Algorithms, Statistics, Linear Algebra

TECHNICAL EXPERIENCE

Software Engineer Intern — May 2024 – Present
Intact Financial Corporation — *Toronto, Ontario, CA*
- Reduced monthly service release tagging time by **98%** (from 2 hours to 2 minutes) by developing an automated GitHub pipeline.
- Decreased service downtime from days to hours by creating a bash script for monitoring and **auto-restarting downed OCP pods**.
- Optimized CI/CD resource usage and reduced operational costs by supporting **migration of Jenkins to a containerized architecture**, enabling **dynamic scaling of build resources**.

Machine Learning Researcher — May 2024 – Present
Computational Social Sciences Lab, University of Toronto — *Toronto, Ontario, CA*
- Developing novel **LLM agents for knowledge graph completion** and researching retrieval augmented generation (RAG) methodologies for **explainable multi-hop reasoning** over knowledge graphs under Prof. Ashton Anderson.

Machine Learning Engineer — Sep 2023 – Apr 2024
Urban Data Center, University of Toronto — *Toronto, Ontario, CA*
- Engineered a novel knowledge source to **extract Knowledge Graph entities** via NER from unstructured text by finetuning **Large Language Models (LLMs)**.
- Resolved overlapping entity spans by training BERT-based models on individual and subsets of entity types, and experimenting with span-level classification LLM models, using **PyTorch** and **Optuna**.
- **Containerized the model** using **Docker** to facilitate inference and integration with other knowledge sources.

Software Engineer - Full Stack — Sep 2023 – Dec 2023
UNICEF Canada — *Toronto, Ontario, CA*
- Developed an **open-source tool** to clone Apache Superset dashboards and a **novel cloud-based version control system** to facilitate duplication of Superset dashboards across staging and production environments using **Python, Firebase, and JavaScript**.
- Eliminated dashboard cloning redundancy, **reducing time taken** to clone and rebuild dashboards across Superset instances **by 93.6%** (from 15 minutes to 57 seconds) across **100+ UNICEF offices** worldwide.

PROJECTS

Atomic Life Simulation | *Rust, Tauri, JavaScript, HTML/CSS* — github.com/whyismynamerudy/particle-life-rust
- A simulation of atoms with different interaction rules (attraction/repulsion) that demonstrates **emergent, life-like behavior** within the particles.

ShiftyTech | *Python, TensorFlow, OpenCV, Milvus* — github.com/whyismynamerudy/shiftyTech
- **[Hack the North 2023 Winner]** Developed an innovative programming medium that allowed developers to **code using body poses** using Python, **Tensorflow, OpenCV, and Milvus**.
- Applied pose estimation models and kNNs for **pose classification** using a vector database of labeled poses.

Spotify MultiSelect | *TypeScript, React.js, Next.js, TailwindCSS* — github.com/whyismynamerudy/spotify-multiselect
- Engineered a full stack solution that lets users add multiple tracks to a playlist at once, addressing a gap in the current Spotify ecosystem.
- Achieved a **67.11%** reduction in track addition time, yielding an average time-saving of **4.77 seconds per track** by utilizing the Spotify API for batch addition of tracks.

TECHNICAL SKILLS

Languages: Python, C, Java, JavaScript, TypeScript, Rust, SQL, Assembly, Shell Script, HTML/CSS, SCSS
ML/AI: PyTorch, scikit-learn, Keras, OpenCV, NumPy, Pandas, Matplotlib
Frameworks: React.js, Next.js, React Native, Node.js, Express.js, Flask, TailwindCSS
Utilities: Git/GitHub, Amazon Web Services (AWS), Vertex AI (GCP), CI/CD, MongoDB, MySQL, PostgreSQL