Archita Srivastava

Computing Science major with a passion for
building impactful projects in the field of AI/ML

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Relevant Experience

Machine Learning Developer Co-op, Royal Bank of Canada Sept 2024 - Dec 2024

- Prototyped novel workflows and proof of concepts for **Agentic systems** like **Crew AI** in an Agile lab environment, delivering bi-weekly code updates and automation deployments
- Conducted hands-on research within the **Generative AI space**, providing actionable recommendations for new tools and frameworks, leading to the enhancement in addressing business use cases

Data Engineer Co-op, Royal Bank of Canada Amplify May 2024 - Aug 2024

- Collaborated with a cross-functional team of **4 students** to tackle a key business challenge within the RBC **Amplify Program**, which included 72 participants from across Canada, achieving significant impact and recognition
- Developed **Aria By Avion**, an MVP that boosted user engagement in RBC's Avion Rewards loyalty program by **20%** through the **integration of Generative AI and Search Technology**, resulting in personalized **offer recommendations** and a tailored search experience **driven by semantic search**
- Implemented web scraping algorithms and **Retrieval-Augmented Generation (RAG),** enhancing merchant data by **167%** and optimizing database design with **ChromaDB**, a vector database, which improved data retrieval speed and accuracy by **50%**

Machine Learning Researcher, Let's Solve It - Borealis AI Mar 2024 - April 2024

- Developed an image-to-text model leveraging **BLIP and Vision Transformer (ViT)** architectures, achieving a significant improvement in diagnostic accuracy for chest X-ray images, with model evaluations demonstrating a **10% increase** in report accuracy compared to existing methods
- Utilized the **MIMIC-CXR dataset from PhysioNet**, encompassing over **400 thousand chest X-ray images** and associated radiology reports, to train and validate the model, ensuring comprehensive coverage and robust performance
- Streamlined the diagnostic process, reducing the time required for generating radiology reports by **99%,** thereby **enhancing the speed and efficiency of radiological assessments**, particularly benefiting rural areas with limited healthcare access

Applied Artificial Intelligence Intern, Vector Institute Jan 2024 - April 2024

- Managed and operated **3 AI projects** focused on streamlining the development, deployment, and scaling of AI applications for industry sponsors, resulting in a 35% increase in project efficiency
- Fine-tuned **Natural Language Processing (NLP) models** to predict hospital readmission rates, achieving a 20% improvement in prediction accuracy, which aims to optimize resource allocation and enhance patient care outcomes
- Developed a multi-modal model using **MIMIC-4 healthcare** data for comprehensive fairness analysis, accounting for age, gender, and race, which contributed to more equitable healthcare outcomes **and was showcased in an oral presentation at the CAHSPR Conference**

Undergraduate Research Assistant, ROSIE Lab, SFU Jan 2023 - Apr 2023

- Implemented an **Emotion Inference system** using **Large Language Models** to predict emotions portrayed in images across diverse everyday scenarios, enhancing the accuracy of emotion detection by 40% and expanding the system's applicability.
- Automated the generation of **image annotations using CLIP**, a text-to-image classification model, resulting in a 75% improvement in work efficiency and a more streamlined annotation process.
- Developed and designed an **image-tagging interface using AWS Amplify**, improving data storage efficiency in the back-end by 15% and creating a more intuitive annotation process for users

  Outcome: Achieved First Place at SFU Undergraduate Symposium 2023 and presented at the ACII Conference at MIT

Education

Simon Fraser University (2021-

Bachelor of Science in Computing Science Artificial Intelligence and Machine Learning Concentration & Statistics Minor, **CGPA - 3.90 / 4.33**

Academic Awards: Best Poster Award at the SFU Undergraduate Research Symposium 2023; Fall 2023 Open Scholarship

Clubs and Activities: Technical Exec. at Women in Computing Science; Tech Consultant at Axis Consulting; Lead Organizer of Hack-the-Sem; Academics First Tutor; C.O.D.E Initiative Instructor; Computing Science Peer Tutor

Skills

Programming Languages

Python, C/C++, HTML, CSS, Java, R

Libraries & Frameworks

Pandas, NumPy, PyTorch, Tensorflow, Scikit-Learn

Platforms & Databases

Git, Github, Figma, ChromaDB, MongoDB, SQL, Tableau, Jupyter, VS Code

Select Projects

RadioCare

Developed an image-to-text model that generates accurate radiology reports and diagnoses for chest X-ray images.

News Sentiment Analytics - Media Polarization

The project investigates media bias by analyzing how news outlets across the political spectrum use emotional language in reporting on polarizing topics like abortion and immigration.

Academic Work

Yang, V. et al. (2023) Contextual emotion estimation from image captions

CAHSPR 2024 Oral Presentation - Analyzing Healthcare Disparities in Hospital Readmissions

Interests

Running, Investing, AI in Healthcare, Drumming