

# Sai Shailesh Nanisetty

🏠 3701- 82 Dalhousie St, Toronto, ON M5B 0C5

📞 (437) 566-0979 🌐 [website](#) [linkedin](#) [github](#) ✉ [nshylesh32@gmail.com](mailto:nshylesh32@gmail.com)

## EDUCATION

<b>University of Toronto</b> <i>Master of Science in Applied Computing (Artificial Intelligence)</i> <i>[Courses] Neural Networks &amp; Deep Learning, Natural Language Processing, Visual and Mobile Computing, Computer Vision, Probabilistic Learning &amp; Reasoning</i>	Sep 2023 - April 2025 GPA: 4.0/4.0
<b>Indian Institute of Technology, Kharagpur</b> <i>Dual Degree (B.Tech+M.Tech) in Industrial Engineering, Micro Specialization in AI</i> <i>Silver Awardee, Department Rank 2</i> <i>[Courses] Optimization &amp; Heuristics, Data Structures &amp; Algorithms, Probability, Multivariate Statistical Modelling, Foundations of ML, Linear Algebra, Engineering Mathematics</i>	July 2018 - May 2023 GPA: 8.65/10

## WORK EXPERIENCE

<b>Research Intern @ServiceNow</b>   <i>Python, LLMs, Prompt Engineering, Git</i>	Feb 2025 - Present
<ul style="list-style-type: none"><li>Creating AgentADA: an autonomous agent that learns &amp; applies advanced data analytics tools from unstructured code sources</li><li>Developed the Insight Toolkit by extracting, verifying &amp; categorizing code blocks from various analytics notebooks.</li><li>Automated metadata generation &amp; skill filtering using few-shot &amp; instruction-based LLM prompting techniques respectively.</li><li>Conducting research to optimize RAG workflows, focusing on improving tool retrieval &amp; adaptation for domain-specific analytics.</li></ul>	
<b>ML Developer Intern @Synapsis Medical Technologies Inc.</b>   <i>Python, PyTorch, Tensorflow, React,Docker</i>	Aug 2024 - Feb 2025
<ul style="list-style-type: none"><li>Developed a React app integrating 3 ML models to get real-time facial expressions, head poses and heart rates with a 75 ms latency.</li><li>Designed SSL model leveraging contrastive learning with triplet loss to improve representation learning for the aforementioned models</li><li>Implemented hard negative mining in triplet loss to enhance embedding separability, reducing facial emotion classification loss by 15%</li><li>Pioneered a multimodal monitoring system to analyze interaction of emotional, physical &amp; physiological states for tailored insights.</li></ul>	
<b>Data Science Associate @Balyasny Asset Management</b>   <i>Python, PostgreSQL, Streamlit, Databricks</i>	May 2024 - Aug 2024
<ul style="list-style-type: none"><li>Developed an Apache Airflow DAG for BAM Elevate, automating data population processes &amp; improving workflow efficiency by 30%</li><li>Structured multi-level datasets from investor &amp; deal interaction feedback, enhancing analysis speed by 25%</li><li>Optimized SQL queries for faster geographical expansion insights, reducing extraction &amp; aggregation time by 40%.</li><li>Built dynamic Streamlit dashboards for various use cases providing real-time insights, supporting key investment decisions.</li></ul>	
<b>Generative ML Intern @16 Bit Inc.</b>   <i>Python, PyTorch, HuggingFace, Transformers, Git</i>	Nov 2023 - Feb 2024
<ul style="list-style-type: none"><li>Developed PaddleOCR-ViT model to extract patient details from DXA sheets, achieving 92 % accuracy on test set of 1200 samples</li><li>Performed zero-shot &amp; few-shot prompting on Llama2 7B &amp; Zephyr 7B, achieving ROUGE-L score of 45.2 in report summarization.</li><li>Fine-tuned models using PeFT-LoRA techniques enhancing contextual accuracy of report summaries with a ROUGE-L score of 48.3.</li></ul>	
<b>Computer Vision Intern @Bharat Smart Services</b>   <i>Python, Tensorflow, Android Studio, Docker, Git</i>	May 2021 – Aug 2021
<ul style="list-style-type: none"><li>Developed &amp; deployed custom CNN models, achieving 91% accuracy on test set, to classify electric meters &amp; extract readings using YOLOv5. Built an Android app for real-time electric meter reading &amp; automated billing, streamlining the process for end-users.</li></ul>	

## MAJOR PROJECTS

<b>Prompt-GS: Segment Anything in 3D Gaussians with Multi-View Text Prompting</b>   <a href="#">link</a>	Feb 2024 - May 2024
Collaborators: Kai Zhu, Lakshya Gupta, Anannya Popat, University of Toronto	
<ul style="list-style-type: none"><li>Developed an enhanced 3D segmentation method by integrating Gaussian Splatting with prompt-based segmentation.</li><li>Employed LangSAM for text-prompted object segmentation &amp; DUST3R for efficient point-cloud initialization.</li><li>Developed multi-view mask generation &amp; label voting for accurate 3D object segmentation from sparse views.</li><li>Achieved higher accuracy &amp; IoU scores with 50 percent fewer views alongside cutting down compute requirements by 23%.</li></ul>	
<b>TinyHR @University of Alberta</b>   <a href="#">link</a>	Aug 2021 - Aug 2022
Collaborators: Preetam Anbukarasu, Ganesh Tata, Prof. Nilanjan Ray, University of Alberta	
<ul style="list-style-type: none"><li>Built a hybrid FFNN-CNN pipeline that extracts heart rate from pressure data acquired on low-power ESP32 device.</li><li>Wrote C++ Scripts for suitable deployment of implemented PyTorch models onto ESP32 edge device.</li><li>Proposed method cuts energy and time inference by 82 % &amp; 28 % compared to state of the art methods.</li></ul>	
<b>Improvised sequential few-shot segmentation - UG Thesis @IIT KGP</b>   <a href="#">link</a>	Dec 2021 - May 2022
Collaborators: Prof. KS Rao, IIT Kharagpur	
<ul style="list-style-type: none"><li>Designed a Few-Shot CNN algorithm for segmenting low-labelled images by reducing perceptual bias.</li><li>Incorporated set of Difference of Gaussians and bi-directional ConvLSTM algorithm in the framework.</li><li>Performance measured in mean IOU shot up by 6.26 % &amp; 1.2 % for 1 &amp; 5 shot cases respectively.</li></ul>	

## TECHNICAL SKILLS & CERTIFICATIONS

<b>Languages:</b> Python, C++, C, R, Matlab
<b>Machine Learning:</b> Transformers, PyTorch, JAX, Tensorflow, Keras, OpenCV, Hugging Face
<b>Data Science:</b> Pandas, Numpy, Scikit-Learn, Statsmodels, Scipy, Plotly, Seaborn, PySpark, Databricks, Microsoft Power BI
<b>Database and Web Frameworks:</b> SQL, PostgreSQL, MongoDB, React, NodeJS, FastAPI
<b>Tools and OS:</b> Docker, Heroku, Flask, Spark, Dask, Git, Linux, Ubuntu

## ACHIEVEMENTS

<ul style="list-style-type: none"><li>Awarded the MITACS Globalink Graduate Fellowship worth 15000 CAD to aid further research in Canada.</li><li>One among 1190 students across the globe selected for the prestigious MITACS Global Research Internship.</li><li>Winner of Smart India Hackathon, Government of India, 2020</li><li>Achieved top 0.3 percentile in IIT-JEE examination, 2018 among 1.25 million candidates.</li></ul>
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