

Shuja K.

EDUCATION

University of Toronto

PhD in Computer Science (Machine Learning)

Sept 2019 - Mar 2024 Toronto, Canada

University of Toronto

MScAC in Computer Science (Machine Learning)

Sept 2017 - June 2019 Toronto, Canada

University of Toronto

BASc in Mechanical Engineering (Mechatronics)

Sept 2011 - June 2016 Toronto, Canada

EXPERIENCE

AI Scientist in Residence

Next AI

Part-time Toronto, Canada

- Mentoring 5 start-up ventures to ensure technical excellence and alignment with industry best practices.
- Provided guidance on architecture design, technology selection, and scalability strategies.

Senior Applied Research Scientist

Inferinsics AI

Oct 2023 – Current Toronto, Canada

- Developed and deployed inference pipelines for Large Language Model querying for industrial applications.
- Created versatile agents for tasks such as AI text detection and improving explainability/diagnosis of LLMs.

Senior Machine Learning Engineer

Surgical Safety Technologies

May 2018 – October 2023 Toronto, Canada

- Developed an explainable algorithm for assessing surgical performance using a statistically-driven methodology.
- Deployed an auto-scaling EC2 instance cluster for running inference using machine learning models.
- Created 3D representations of the surgical field of view using Neural Radiance Fields (NeRFs).
- Generated synthetic image datasets using Generative models.

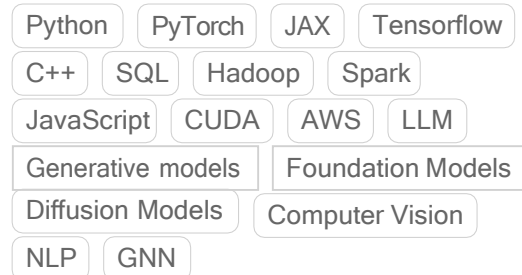
Research Engineer/Physicist

Sunnybrook Research Institute

May 2016 – Sept 2017 Toronto, Canada

- Used computer vision and object detection to create algorithms for identifying and segmenting Traumatic Brain Injury (TBI) in ultrasound guided reconstructions.

TECHNICAL SKILLS



PUBLICATIONS

Selected works:

- Measuring surgical performance using deep learning
- Automated methods of technical skill assessment in surgery: A systematic review
- refiNeRF: An extensible approach for refining erroneous COLMAP predictions
- OR Vision: Objective, explainable assessment of surgical skill with deep learning
- wildNeRF: Novel view synthesis of in-the-wild dynamic scenes captured using sparse monocular data

Patents:

- System and method for surgical performance tracking and measurement
- System and method for operating room human traffic monitoring
- Systems and methods for configuring and operating de-identification systems
- Systems and methods for surgical video de-identification

CERTIFICATIONS

NVIDIA Deep Learning Institute

- Building Transformer-Based Natural Language Processing Application
- Fundamentals of Accelerated Computing using CUDA Python
- Building Real-Time Video AI Applications

TEACHING

- Served as a teaching assistant for courses in machine learning, deep learning, natural language processing, computer vision and web development at the University of Toronto.