

# Lafith Mattara

[lafith.net](http://lafith.net) | [lafithmattara@gmail.com](mailto:lafithmattara@gmail.com) | [linkedin.com/in/lafith](https://linkedin.com/in/lafith) | [github.com/lafith](https://github.com/lafith)

## WORK EXPERIENCE

---

### R&D Engineer

Feb 2024 – Present

*Image-Guided Robotics, Healthcare Technology Innovation Centre, IIT Madras*

*Tamil Nadu, India*

- Developing multi-modal deep learning architectures for an autonomous Robotic Fetal Ultrasound System (RUSS), integrating standard plane detection, anatomical structure segmentation, and biometry extraction.

### Visiting Research Scientist

Jan 2023 – Dec 2023

*University of Alabama at Birmingham (UAB)*

*Alabama, USA*

- Conducted deep learning-based analysis of whole slide images from breast cancer patients to investigate racial disparities in mortality rates.
- Facilitated collaboration and project coordination between [Dr. Jun Kong](#)'s Biomedical Imaging Informatics Lab at Georgia State University and [Dr. Ritu Aneja](#)'s Cancer Biology Lab at UAB.

### Project Engineer

Nov. 2021 – Oct. 2022

*Healthcare Technology Innovation Centre, IIT Madras*

*Tamil Nadu, India*

- Developed a VR application using Unity and Unreal Engine for real-time visualization and interactive manipulation of stereo-endoscope data streams.
- Designed and optimized deep learning models for polyp detection in endoscopic images, enhancing performance for deployment on edge devices.

### Research Intern

May 2021 – July 2021

*Center for Computational Imaging, IIT Palakkad*

*Kerala, India*

- Contrast enhancement of industrial CT, in collaboration with VisiConsult Germany.

## EDUCATION

---

### National Institute of Technology Rourkela ([NITRKL](#))

Odisha, India

*Bachelor of Technology in Biomedical Engineering*

*Aug. 2017 – July 2021*

## PROJECTS

---

### [AUV Simulator](#)

April 2018 – Dec. 2020

- A simulator for testing the software stack by simulating underwater environment and various sensor data. Built using Unity, Blender and ROS.
- Won [SAVE-2019](#), as [Tiburon](#) simulator dev team lead, organized by National Institute of Ocean Technology (NIOT), IEE-OES and Ocean Society of India (OSI).

## CONFERENCES

---

### Clinical Ultrasonography in Practice conference ([CUSP](#))

Sep 2024

*Workshop: AI in OBGYN Ultrasound - Current Technologies (Live Demo)*

- Presented an Autonomous Robotic Fetal Ultrasound System with a real-time 20+2 standard plane detection model.

### Annual Translational and Transformative Informatics Symposium([ATTIS](#))

April 2023

*University of Alabama at Birmingham*

- A Machine learning model to evaluate the association between the tumor microenvironment and neighborhood deprivation in Black and White women with Triple Negative Breast Cancer.

### Asian-Pacific Conference on Biomechanics ([AP Biomech 2019](#))

Nov 2019

*Taipei, Taiwan*

- Investigation of the biomechanical properties of animal skin. A hyperelastic material model-based analysis using stress-strain data obtained from uniaxial tensile tests, aimed at characterizing skin elasticity and its response to mechanical loads.

## TECHNICAL SKILLS

---

**Languages:** Python, C/C++, Rust, C#, R

**Frameworks:** PyTorch, Tensorflow, OpenCV, ROS

**Libraries:** Scikit-learn, Kornia, Pandas, NumPy, Matplotlib

**Other:** Unreal Engine 5, Unity, Blender