Shriarulmozhivarman G C

Computer Vision Engineer | ROS Developer

@ shriarulmozhivarman@outlook.com
linkedin.com/in/shriarulmozhivarman
www.github.com/shriarul5273
shriarul5273.github.io
🤗 shriarul5273
+33 7 86 99 94 44
Dijon, France

EDUCATION

LE CREUSOT, FRANCE
Sep., 2020 - Sep., 2022

University of Burgundy
Masters of Science – Computer Vision
Specialization: Vision and Robotics
Thesis: Robust RGB-Depth images Fusion for Salient Object Detection

VILNIUS, LITHUANIA
Sep., 2015 - Jun., 2019

Vilnius Tech
Bachelor of Science – Mechatronics
Specialization: Mechatronics and Robotics
Thesis: Design Of Collaborative Indoor Robots

WORK EXPERIENCE

DIJON, FRANCE
Feb., 2022 - Jul., 2022

Imagerie et Vision Artificielle (ImViA) University of Burgundy
Research Internship, Supervisor : Prof.Dr.Cédric Demonceaux
Topic: RGB-Depth Fusion for Salient Object Detection

- Proposed a novel attention modules to explicitly leverage the depth quality images.
- Improved the vanilla spatial attention to efficiently address the depth misalignment problem with RGB images.
- Integrated the model for real-time processing with ROS for salient object detection.

LE CREUSOT, FRANCE
Jul., 2021 - Sept., 2021

Imagerie et Vision Artificielle (ImViA) University of Burgundy
Computer Vision Internship

- Implemented a pipeline for robust feature detection and matching for Epipolar geometry.
- Applied and compared state of the art methods for feature detection and matching of multi-view.
- Gathered and annotated a temporal dataset on a dynamic environment for autocalibration.

COIMBRA, PORTUGAL
Jul., 2018 - Sept., 2018

Ingeniarius
Robotics Internship

- Design and development of a multi-sensor differential drive mobile robot.
- Integrated Arduino and Raspberry pi using ROS to exchange complex data.
- Implemented maze solving algorithm into finite-state machines on ROS.

PROJECTS AND COURSES

LE CREUSOT, FRANCE
Sept., 2021 - Jan., 2022

Robotics Research Lab, Condorcet University Center
Mobile Robot Autonomous Perception and Navigation

- Developed an efficient automated perception workflow for lane detection and autonomous driving with ROS.
- Calibrated a fisheye camera in eye-to-hand configuration for pose estimation.
- Applied visual odometry pipeline on calibrated RGB camera in the mobile robot for robust pose estimation and compared them with an estimation from the fisheye camera.

Open CV Online Course

Nov., 2020 - Jan., 2022 **Deep Learning with PyTorch**

- Implemented vision tasks such as Image Classification, Scene Segmentation, Object Detection, Action Detection and Pose Estimation on open-source datasets.
- Dockerized the implemented models into images for deployment on cloud(amazon lambda).
- Creation and maintenance of datasets for deployment and inference.

edx Online Course

Jan., 2020 - Mar., 2020 **Hello (Real) World with ROS Robot Operating System**

- Software representation of a Robot using Unified Robot Description Format (URDF) and real-world objects in simulation environment.
- Implemented map creation of environment and autonomously navigation of mobile robot with created map using ROS navigation tools.
- Integration of motion planning, pick and place behaviors using industrial robots with ROS MoveIt.

PUBLICATIONS

PRAGUE, CZECH REP. **10th International Conference on 3D Vision**

Sep., 2022 **Robust RGB-D Fusion for Saliency Detection**

🤗 Deployed Hugging Face space of the paper

ACHIEVEMENTS

15th Batch of International Programme in VIsion roBOTics (VIBOT)

Sep., 2020 - Sep., 2022 **Best Student of the Year 2020 - 2022**

SKILLS AND ABILITY

Programming Languages: Python, Matlab.

Machine Learning Tools: PyTorch, Sklearn, Tensorflow, PyTorch Lightning.

Computer Vision Tools: OpenCV, PIL, Matlab Image Processing Toolbox.

Operating Systems: Linux, ROS, ROS2.

Hardware Tools: Arudino, Raspberrypi, Jetson Devices.

CI/CD Tools: Git, Git Actions, Docker, Streamlit, Gradio.

REFERENCE

Prof.Dr.David Fofi

Deputy Director of Imagerie et Vision Artificielle (ImViA) University of Burgundy

david.fofi@u-bourgogne.fr

Prof.Dr.Cédric Demonceaux

Thesis Supervisior at Imagerie et Vision Artificielle (ImViA) University of Burgundy

cedric.demonceaux@u-bourgogne.fr

LANGUAGES

English-*C1* Tamil -*Native*

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