Shriarulmozhivarman G C

Computer Vision Engineer | ROS Developer

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EDUCATION

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

Université de Bourgogne
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) - Université de Bourgogne
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.
- Achieved the state-of-the-art performance on challenging datasets with smaller model sizes.

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

Imagerie et Vision Artificielle (ImViA) - Université de Bourgogne
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

- Designed and developed of a multi-sensor differential drive mobile robot.
- Implemented a streaming architecture to exchange all necessary data between Arduino Mega and Raspberry Pi using Arduino and ROS.
- Implemented maze solving algorithm into finite-state machines on ROS.

PROJECTS AND COURSES

LE CREUSOT, FRANCE
Jan., 2022 - Feb., 2022

Personal Project
2D Object Detection for pick and place on Dynamic Scenes

- Trained and compared models with different backbones on YOLO algorithms for robust estimation, better FPS on the temporal dataset.
- Trained and deployed light-weight object detection pipeline on Jetson Nano.
- Integrated ROS and developed object detection method for pick and place application.

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

Robotics Lab, Centre Universitaire Condorcet

Mobile Robot Autonomous Perception and Navigation

- Developed an efficient automated perception workflow for lane detection and autonomous driving.
- 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 the estimation from the fisheye camera.

Nov., 2020 - Jan., 2022

Open CV Online Course

Deep Learning with PyTorch

- Implemented and 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.
- Integration of continuous deployment pipeline of object detection with streamlit on amazon lambda.

Jan., 2020 - Mar., 2020

edx Online Course

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
Sep., 2022

10th International Conference on 3D Vision

Robust RGB-D Fusion for Saliency Detection

SKILLS AND ABILITY

Programming Languages: Python, Matlab, C++.

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, Docker, Streamlit, Kubernetes.

REFERENCE

Prof.Dr.Cédric Demonceaux
Thesis Supervisior at Imagerie et Vision Artificielle (ImViA) - Université de Bourgogne
cedric.demonceaux@u-bourgogne.fr

Prof.Dr.David Fofi
Deputy Director of Imagerie et Vision Artificielle (ImViA) - Université de Bourgogne
david.fofi@u-bourgogne.fr

LANGUAGES

English-*C1* French-*B1* German-*A2* Tamil -*Native*

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