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RANISH DEVKOTA

EDUCATION

Bachelor's degree in Electronics Communication and Information Engineering | NOV, 2018 – AUG, 2023
TRIBHUWAN UNIVERSITY, INSTITUTE OF ENGINEERING (IOE)
EASTERN REGIONAL CAMPUS(ERC)
Dharan, Nepal

WORK EXPERIENCES

Research & Development Engineer | June, 2023 – Present
Orion Space PTV. LTD., Kathmandu, Nepal

- Embedded System, Communication system and Electrical Power Subsystem design of PocketQube.
- Sensor interfacing, Deconstruction and Testing for Pico/Nano satellites.
- Firmware & Mission design for Low Voltage / High Frequency systems and Testing.

Undergraduate Researcher | JAN, 2020 – MAY, 2023
Robotics Club, IOE Purwanchal Campus
Supervisor Asst. Prof. Deependra Neupane

- Control and Dynamics of Two wheeled Robot.
- System identification and Mathematical modelling.
- Computer Vision and Robot Perception with ROS
- Involved in Other Projects like Robotic arm, Drone Control systems, CNC Machines etc.

PUBLICATIONS

Baskota, G., **Devkota, R.**, Paneru, S., Yadav, S., Neupane, D., Dhakal, O.
Analytical and Experimental Approach for Modeling, Simulation and Validation of Two-Wheeled Self-Balancing Robot
2023 ICICT, IEEE.

Paneru, S., Yadav, S., **Devkota, R.**, Baskota, G., Guragai, M. K., Dhakal, O. P., Neupane P., Shrestha, A.
Mapping and Localization of Mobile Robot with Monocular Camera Using VSLAM.
Int. J. Adv. Engr. 2023, 6(2), pp.24-36.

PRESENTATIONS

- Analytical and Experimental Approach for Modeling, Simulation and Validation of Two-Wheeled Self-Balancing Robot. | ICICT 2023
- Comparison of Controls for Two wheeled Robots | DELTA 2020
- PCB Designing and Fabrication Process. | YARSA 2023
- AI and IOT in Agriculture. | DELTA 2020

TECHNICAL SKILLS

Embedded System Design, Control System Design, Robotics & IOT, Satellite System Design, Robot Perception & Machine Vision, Signal Analysis and Processing.

Software: Robot Operating system (ROS), MATLAB/Simulink, KiCad, Fusion360, GNU Radio & HFSS

Programming: C/C++ , Python

Others: Linux , Git/Version Control

PROJECTS AND RESEARCHS

Design and Development of fully functional PocketQube for Nepal (SANOSAT-2). | Ongoing (Orion's Funding)

- Upgrade on SANOSAT-1.

Mathematical Modelling, Simulation and Validation of Permanent Magnet DC Motor

- Second Order Modelling of Cheap PMDC for Robot.

Modelling, Simulation and Validation of Two Wheeled Self-Balancing Robot

- Control system design and mathematically modelling of the robot along with all its components

Mapping and Localization of Mobile Robots with Monocular Camera using V-SLAM.

- Implemented SLAM in fabricated robot with monocular USB camera.

Autonomous multi-colored line follower and Maze Solver robot

- Multi-colored wall-line maze solver robot with camera assistance for decoding information

Firmware development for environmental sensing iot system.

- Developed C++ Firmware with implementation of MQTT protocol as well as energy saving mode.

Vegetable Grading Machine

- Developed a computer vision algorithm and robotic systems for grading and categorizing different sizes of vegetables, in collaboration with Swiss-contact's SAHAJ Project and DELTA 3.0.

HONOURS & AWARDS

- **First Runner Up in Model Based simulation using MATLAB/SIMULINK at DELTA 2.0 | 2021**
- **Winner of Yantra 8.0 Automatic Akhada (Autonomous path solving Robo on Raspberry Pi) | 2020**
- **First Runner up in Robo race at VECTOR 2.0 | 2020**
- **Winner on Robo War & Robo Race at PRAYOG EXPOSITION | 2019**

NOTEABLE LEARNING

KARI International Space Training 2023 | 11 SEPT – 15 SEPT, 2023

Korea Aerospace Research Institute

- Gained insights into satellites, satellite system engineering, orbital mechanics, and more

SEEDS FOR THE FUTURE | 29 NOV – 6 DEC 2021

NEPAL'S FIRST SEEDS FOR FUTURE PROGRAM BY HUAWEI

- Learned about 5G, AI, Cloud technologies, and developed Tech for Good projects.

Deep Learning Specialization | 15 JUL – 29 AUG, 2020

Deeplearning.AI

- Studied foundations of deep learning, neural networks, CNNs, and sequential models like Hyper Parameter tuning, Regularization and Optimization.

VOLUNTEERING & LEADERSHIP

Event Coordinator | Jan 11 -- Jan 13, 2023

X-Tech Studio 3.0

Advisor | Jun 2022- Mar 2023

ELECTRONICS & COMMUNICATION ENGINEERING STUDENT SOCIETY(EXCESS)

Secretary | Jun 2021- Jun 2022

ELECTRONICS AND COMMUNICATION ENGINEERING STUDENT SOCIETY(EXCESS)

Member | Sep 2020 – Present

ROBOTICS ASSOCIATION OF NEPAL (RAN)

Member | Sep 2018 – June, 2023

ROBOTICS CLUB, IOE PURWANCHAL CAMPUS

REFERENCES

Asst. Prof. Deependra Neupane

HOD, Department of Electrical Engineering

Institute of Engineering, Eastern Regional Campus

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Asst. Prof Pukar Karki

DHOD, Department of Electronics & Computer Engg.

Institute of Engineering, Eastern Regional Campus

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