RANISH DEVKOTA

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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.
- Low Voltage / High Frequency design 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

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

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
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TECHNICAL SKILLS

- Embedded System Design
- Control System Design
- Robot Operating System (Humble & Noetic)
- MATLAB/Simulink
- Signal Analysis and Processing
- Schematics and PCB Design
- Internet of Things (IOT)
- Computer vision and Deployment
- Machine Learning / Deep Learning
- Computer Aided Design (Fusion 360)

REFERENCES

Asst. Prof. Deependra Neupane
HOD, Department of Electrical Engineering
Institute of Engineering, Eastern Regional Campus
deependra@ioepc.edu.np

Asst. Prof Pukar Karki
DHOD, Department of Electronics & Computer Engg.
Institute of Engineering, Eastern Regional Campus
pukar@ioepc.edu.np