Niladri Dutta

Graduate Student - Autonomous Systems

A graduate engineering student looking to leverage my skills in embedded systems, machine intelligence and robotics to work for a vision-driven organisation on challenging projects in the domain of automation control systems and robotics technology.

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EDUCATION

MS. Autonomous Systems (ICT Innovation)
at TU Berlin, Germany and Aalto University, Finland

09/2019 - Present *EIT Digital Masters School, Double-Degree Programme, with Minor in Entrepreneurship*

B.Tech. Electronics and Communication
Shiv Nadar University, India

08/2014 - 05/2018 *Minor in Physics, GPA: 9.01/10, High Distinction*

WORK EXPERIENCE

Engineer (Autonomous Systems)
FaSTTUBe (TU Berlin), Berlin

10/2019 - 08/2020 *Berlin, Germany*
TU Berlin Formula Student Driverless Vehicle Development Team

- Developed a computer-vision based object detection and path mapping system with OpenCV & Tensorflow.

Associate System Engineer
IBM

09/2018 - 09/2019 *Bangalore, India*

- PL-SQL developer for enterprise billing database applications.

Engineering Intern (Robotics)
Omnipresent Robot Tech.

01/2018 - 04/2018 *Vishakhpatnam & New Delhi, India*
Robotics, industrial UAV and video analytics solutions start-up.

- Developed Long-Range Video & Telemetry Transmitter for terrain mapping UAVs
- ROS-based path planning for the "Driverless Car Project"

Teaching Assistant
Electrical Engg. Dept., Shiv Nadar University

08/2017 - 12/2017 *Greater Noida, India*

- Designed lab experiments, organised tutorials and assisted in the lab sessions for the courses - Digital Electronics and Intro. to Robotics.

Student Intern
Indian Institute of Technology-Madras (IIT-M)

06/2017 - 07/2017 *Chennai, India*
RISE Lab (Computer Science Dept.)

- Worked on "Open OCD based Debug Module for the Shakti Processor" under the guidance of Prof. V. Kamakoti.

SKILLS

`C/C++, Python` `Matlab/Simulink` `OpenCV`
`PyTorch/Tensorflow` `Embedded Software` `Git`
`Robotics Operating System(ROS)` `OpenAI`
`PCB Design` `Xilinx-FPGA` `IoT` `SLAM`
`Sensor Fusion` `AI - ML/RL` `Digital Control`

PERSONAL PROJECTS

Sensor Fusion for Autonomous Robot Tracking (10/2020 - Present)
- Developed an algorithm for tracking an autonomous robot by using sensor data from the IMU and camera system.

Self-Balancing Robot with Digital Controller (09/2020 - 12/2020)
- Designed an optimal digital controller using LQR control along with state estimator and compensator.

Autonomous Self-Parking Vehicle (04/2020 - 08/2020)
- Technical leader & project coordinator for an 8 member team.
- Developed a navigation system on ROS using HectorSLAM for mapping and a custom-designed path-planning algorithm.
- System was demonstrated on the MORSE simulator.

Object Trajectory Deflector with 7DOF Robotic Arm (04/2020 - 08/2020)

Indoor UAV Localization for Industrial Chimney Inspection(Bachelor's Thesis Project) (08/2017 - 05/2018)
- Developed an indoor localization system for a UAV to navigate inside industrial chimneys for structural inspection.
- Localisation system used Arduino with ultrasonic rangefinders, LiDAR and image processing on OpenCV.
- UAV used Pixhawk/Ardupilot for flight control.

Processor Designing & Implementation on FPGA (05/2016 - 08/2016)
- Worked in a team to design two processors: a single bus 8-bit processor and a 4-stage 8-bit pipeline processor design.
- Validated using Verilog on a Xilinx Artix 7 Nexys 4 FPGA.

ACHIEVEMENTS

EIT Digital Master School Scholarship (08/2019 - Present)

Dean's List & Scholarship, Shiv Nadar University (08/2014 - 05/2018)

LANGUAGES

English
Native or Bilingual Proficiency

Bengali
Native or Bilingual Proficiency

German
Elementary Proficiency

Hindi
Native or Bilingual Proficiency