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Ammar Alam Malik

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EDUCATION

MANIPAL INSTITUTE OF TECHNOLOGY
Bachelor of Technology, expected July 2021
Coursework: Electrical and Electronics

ONLINE CERTIFICATIONS

- Deep Learning and Neural Networks | Coursera *4 weeks*
- Algorithmic Toolbox | Coursera *6 weeks*
- Data Structures and algorithms using C++ | Udemy *1 week*
- Kaggle Mini Courses | Kaggle *4 weeks*

EXPERIENCE

OMNIPRESENT ROBOT TECH
Data Science Intern *Mar'20 – May'20*

- Analysed data using Pandas library and by representing data in meaningful ways using Seaborn library.
- Implemented Principal Component Analysis techniques to find key features and SVM decision boundary on the
- Implemented multi-class classification using MaskRCNN on RGB images.
- Performed Semantic Segmentation using U-Net architecture with different encoders on RGB images.
- Compared the accuracy of different U-Net architectures using Fast.ai library.
- Determined optimal parameters using Bayesian optimization with Hyperopt library.

INDRAPRASTHA INSTITUTE OF INFORMATION TECHNOLOGY, Delhi
Robotics Research Intern *May'19 – July'19*

- Worked on development of Autonomous rovers using Pixhawk 2.0.
- Setup control of rovers using transmitter receiver pair, using Futaba transmitter and 3dr radios.
- Established communication between two rovers using multi-master ROS running on Raspberry pi's.

ROBOTICS AND CIRCUITS
Board Member *Mar'20 – Present*

- Member of the board of Advisory, assisting in major technical and managerial decisions of the organization
- Core Committee member of the university's featured technical exhibition, Vedanth 9.0
- Skills gained include formulating the budget, procuring logistics, fetching sponsorship and project management

SKILLS

- **Hardware**: Raspberry pi, Arduino, Pixhawk 2.0
- **Software**: ROS, Ardupilot
- **Libraries**: Seaborn, Fast.ai, OpenCV
- **Frameworks**: Tensorflow, keras, Git, Scikit, Pandas
- **Programming**: C++, Python, HTML, CSS

PROJECTS

- **Humanoid:** Engineered a biped bot with 8 degrees of freedom using Arduino and a 16 channel servo controller
- **FPGA based car parking system:** Automated calculation and display of the number of vehicles in a parking lot implemented by interfacing an infrared sensor and a dc motor with Nexys DDR4.
- **Automatic Bike turn indicator** Prototyped an IC based bike turn indicator using op-amp, 555 timer and accelerometer implemented on a veroboard and designed a PCB using EagleCAD
- **Robotic Arm:** A Bluetooth controlled servo operated, replica of the human arm, with distinct finger and arm motion for effective gripping of objects.
- **Autonomous Robotics Competition** Secured 3rd place in a line follower competition at IIT Kharagpur. Made a maze solver using an IR sensor array and left turn preferred algorithm