NISHANT RAMAKURU

Robotics Engineer

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Dynamic Robotics Graduate with a strong foundation in AI and a proven track record in designing and implementing advanced robotic systems. Possessing a solid research background, adept at merging AI techniques with robotics to enhance automation processes. Seeking a challenging role to leverage expertise in robotics, AI, and research to drive innovation.

WORK EXPERIENCE:

Halcon | Abu Dhabi

Robotics Engineer | Feb, 2022 - Present

- Pioneered smart algorithms for localization, object detection, tracking, and control of **ABB**, **KUKA** & **UR** robots, including simulations and integrated vision/sensory systems for intelligent processes, deburring, calibration, welding, tending and packaging.
- Collaborated with multi-disciplinary teams to design and implement robust systems, emphasizing integration of hardware and software components, PLCs and HMIs using **Delta**, **Allen-Bradley** & **Siemens** systems.
- Crafted data driven dashboards and analytic pipelines to forecast and visualize actionable events in automation, to minimize downtime, implementing **IoT** & **Industry 4.0** based solutions.

Enall Industries | Hyderabad

Systems Engineer | Jan, 2021 - Dec, 2021

- Collaborated with multidisciplinary teams to design and implement robust solutions, for **Fiber** & **CO2 Laser** engraving and cutting systems.
- Developed and maintained system architecture standard, ensuring alignment with performance, reliability, and scalability requirements.

ALGO8 | Bengaluru

Machine Learning Engineer | May, 2018 - Sept, 2019

- Designing & deploying cutting-edge models to solve complex problems. Proficient in data analysis and algorithm development, leveraging AI to drive innovation.
- Prediction of Xylene and Melt flow rate in **HMEL**(chemical plant), carrying out ad-hoc analysis and production executable APIs from data procurement to prediction. Accuracy of **90%** for recall quality prediction, **68%** Accuracy in identification of lump formation in polypropylene production event in under 5 minutes, **4-5 Hours Total off-spec production time saved**.
- Prediction of UV lamp failure in Unilever. Assessed the data environment in to source data and to help create a machine learning model to avoid failures. Overall lowered production time and save costs, achieved an **85% Recall** Rate across 3 assemblies on 21 lamps.

EDUCATION:

University Of Bristol | Sept, 2019 - Dec, 2020

MSc in Robotics

Courses - **Distinction, 70.70%**

Overall -**Frist Class Honours, 68.47%**

Supervised by **Dr.Namid Stillman(UCL)** & **Prof.Sabine Hauert(UoB)**

International Institute of Information Technology, Pune | Aug, 2014 - May, 2018

B.Eng in Electronics & Telecommunication

Distinction, 7.5 GPA

Supervised by **Dr.Mohan Naidu(IIT Bombay)**

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RESEARCH:

Designing Considerate Swarms

N. Ramakuru, N. Stillman

Proceedings of The Conference on ALIFE, International Society of Artificial Life, 2021

Proposed a **Evolutionary Game-Theoretic** approach to design agents that explicitly considers the behavior and preferences of other agents by incorporating **Bayesian Conditioning**. Agents also displayed interesting social behaviours, queuing, endogenously.

Predicting Collective Dynamics using Dynamic Attention Neural Inference (DANI)

N. Ramakuru, N. Stillman (Ongoing)

The aim of the research is to successfully predict trajectories of swarming agents in a simulated environment by learning the interacting dynamics in the latent space using graph attention networks (**GANs**) and **Inference based models**.

HONORS:

P. P. CHHABBRIA AWARD, 2018

For outstanding contributions at National and International level, **IIIT, Pune**

EDGE INNOVATION CHALLENGE, 2022

Secured **2nd** place for increasing the propulsion efficiency of drone, by **EDGE(U.A.E)**

SMART INDIA HACKATHON, 2017

Winner in nation wide competition organized by the **Ministry of Defense, India**

INTEL HIGHER EDUCATION CHALLENGE, 2017

Secured **9th** nation wide, **Intel, Bengaluru**

PROJECTS:

SPEED CONTROL USING DEEP Q NETWORKS | Halcon

Proposed a **Deep Q-learning** technique to control brushless DC motor to Improve propulsion efficiency of **UAVs by 10%**. Decreased battery consumption compared to traditional PID controllers by **23%**.

COMPUTATIONAL FLUID DYNAMICS USING JAX | Halcon

Proposed a research solution to streamline **CFD parameters**, three-dimensional turbulence, compressibility effects, and two-phase flows using **Generative Adversarial Networks** using **JAX**.

ASIMOV – THE PERSPICACIOUS OCTAPOD | IIIT Pune

An **8 legged spider bot**, capable of clearing mazes using a combination of **Tremaux algorithm** and **Markov decision process**. Capable of mapping environments and transmitting real-time data on a cloud based server.

SKILLS:

LANGUAGES

• Python • C/C++ • Matlab • Java • Bash • ROS • JS

TOOLS

• PyTorch • TensorFlow • SQL • Git • Gazebo