Narendiran Gopinathan Chembu

cgnarendiran@gmail.com (IN: +91 8754 997789) **Senior Machine Learning Engineer | Bangalore, India**

EDUCATION

University of Amsterdam (UvA)
Masters in **Artificial Intelligence**
2018-2020,
Amsterdam, The Netherlands

Indian Institute of Technology Madras (IITM)
B. Tech in **Mechanical Engineering**
(Minor: **Industrial Engineering**)
2013-2017, Chennai, India

LINKS

🌐 Portfolio
⭘ Github
in LinkedIn

FRAMEWORKS

PyTorch, TensorFlow, LangChain, Pandas, Ray, OpenCV, ROS, Unity3D, Git, Docker

LANGUAGES

Python, C++, Javascript

COURSES

Machine Learning, Deep Learning, Computer Vision, Natural Language Processing, Information Retrieval, Data Structures and Algorithms, Reinforcement Learning, Multi-agent systems, and Game theory, Calculus, Linear Algebra & Probability Theory

PUBLICATIONS

Journal "Aqueous Dispersions of Lipid Nanoparticles Wet Hydrophobic and Superhydrophobic Surfaces", 2017, Soft Matter, Royal Society of Chemistry

AWARDS

Coveted **INSPIRE award** (Innovation in Science Pursuit for Inspired Research) consecutively for two years 2009 and 2010 by the Department of Science and Technology (DST), India

WORK EXPERIENCE

Fastcode.AI | Senior ML Engineer
Aug' 2023 - Present (2 years 1 month) | Bangalore, India
- Built an AI legal research bot for Miai Law with vector-based retrieval over 500k+ Australian cases; enabled case research, contract audits, and statute search via indexed crawls—delivered as a full-stack B2C web app with auth and file handling.
- Spearheaded the development of AutoQRA—an AI-driven quantitative risk analysis system for Saudi Aramco that automated the digitization of complex PFDs/P&IDs using custom DETR models, advanced OCR, and graph-based analysis, reducing QRA preparation time by 85% and achieving detection accuracies above 95%.
- Led the Vital Sensing project (Heart Rate from NIR images) at Mercedes Benz R&D, achieving robust solutions to challenging low signal-to-noise ratio and noisy data, set to be deployed in the upcoming vehicle systems.

Minds.AI Technologies | ML Engineer
Mar' 2022 - Jul' 2023 (1 year 4 months) | Bangalore, India
- Trained an RL setup switching agent (in SMT2020 fab testbed) that reduced queue lengths of wafer lots by 50%, leading to significant improvements in cycle times and throughput; these results attracted new customers
- Built an interactive panel-based dashboard used by the internal team to compare critical KPIs between different policies over time, view Gantt schedules & training metrics

NewSpace Research and Technologies | Robotics and ML Engineer
Apr' 2021 - Mar' 2022 (1 year) | Bangalore, India
- Developed an MVP of fixed-wing flight stack (R&D) in less than three months, which includes: autonomous control in offboard mode of PX4 (SITL, HITL, and real-life), robust simulation with flight dynamics in Gazebo & Unity3D, decentralized collision avoidance algorithms (RVO2), and a communication module with ROS2 & ROS1 bridge
- Built an in-house Ground Control Station software for complex mission planning, obstacle/geofence building, path planning, and status monitoring using PyQt5

CBoost | Robotics and ML Engineer
Oct' 2020 - Mar' 2021 (6 months) | Breda, The Netherlands
- Developed an autonomous robot (Pixie, 4-wheeled drive, Jetson AGX) from scratch in Nvidia Isaac SDK with custom stereo visual odometry (Intel D415) for localization, AprilTag relocalization, obstacle avoidance, and dynamic goal in two months
- Achieved a 0.87 IoU score on a bean field dataset (proprietary) by training a SegNet and HoughCNet in tandem for a crop-row detection pipeline in production

ZyLAB | ML Research Engineer (Thesis project)
Nov' 2019 - Aug' 2020 (10 months) | Amsterdam, The Netherlands
- Determined the most efficient loss-centric method in unsupervised domain adaptation of a pre-trained transformer (BERT) for entity recognition; achieved a performance gain of 0.2 F1 score; also contributed an extensively pre-processed Enron email dataset and annotation set

UvA | Teaching Assistant (Course: Computer Vision/ Image Processing, Bachelors AI)
Mar' 2019 - May 2019 (3 months) | Amsterdam, The Netherlands
- Assisted in programming assignment creation and evaluation in MATLAB & Python
- Provided personal guidance with a face time of 8 hrs/week for the students

Center For Innovation (student-run org. in IITM) | **Software Team, Abhiyaan**
Aug' 2016 - Aug' 2017 (1 year) | Chennai, India
(part of the Institute robotics team; qualified 13th among 34 global teams in the Intelligent Ground Vehicle Competition - IGVC 2017, Michigan USA)
- Implemented a custom pure-pursuit path planner that can handle sharper turns for a differential drive; also worked on EKF pose estimation with wheel encoders, GPS & IMU