

# Narendiran Gopinathan Chembu

cgnarendiran@gmail.com (IN: +91 8754 997789) **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



LinkedIn

## FAMILIAR FRAMEWORKS

PyTorch, TensorFlow, 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

### Minds.AI Technologies | **ML Engineer**

Mar' 2022 - Present (1 year 3 months) | Bangalore, India

- Trained an RL setup switching agent (in SMT2020 semiconductor fab testbed) that reduced queue lengths of wafer lots by 50% and significant improvements in cycle times and throughput; these results led to the attraction of new customers
- Built an interactive panel-based dashboard that is used by the internal team to compare the critical KPIs b/w different policies across 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 the span of two months
- Achieved an 0.87 IoU score on a bean field dataset (proprietary) by training a SegNet and HoughCNet in tandem for crop-row detection pipeline in production

### ZyLAB | **ML Research Engineer (Thesis project)**

Nov' 2019 - Aug' 2020 (10 months) | Amsterdam, The Netherlands

- Determined the efficient loss-centric method in unsupervised domain adaptation of a pre-trained transformer (BERT) for entity recognition; performance gain of 0.2 F1 score; also contributed an extensively pre-processed Enron email dataset and annotation set

### CtCue | **ML Intern**

Jun' 2019 - Jul' 2019 (2 months) | Amsterdam, The Netherlands

- Built a generative autoencoder (s2s LSTM) tool for synthesizing EHRs resulting in 0 waiting time for confidential data acquisition for testing the query pipeline

### 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
- Designed and simulated the robot in Gazebo to test obstacle avoidance, SLAM, and lane-detection vision algorithms thus reducing manual testing times by 75%

## VOLUNTEERING

- **Avanti, NGO (Oct 2013- June 2014)**: Mentored 50+ underprivileged students at Jawahar Navodaya, Pondicherry (11th grade) focussed on cracking Joint Entrance Examination and overall academic excellence