

# Naveen Prashanna Gurumurthy

gnaveen1509@gmail.com | +1 (945) 527 5193 | [github.com/naveen015](https://github.com/naveen015) | [linkedin.com/in/naveen015](https://linkedin.com/in/naveen015)

## EDUCATION

**Master of Science, University of Texas at Dallas**

Computer Science | Specialization in Intelligent Systems

Dallas, USA

Aug 2023 - May 2025

**Coursework:** Discrete Structures, Computer Architecture, Algorithms Analysis and Data Structures, Operating Systems

**Bachelor + Master of Technology, Indian Institute of Technology Madras (IIT-M)**

Major in Mechanical Engineering | Minor in AI and ML | GPA: 7.44/10

Chennai, India

Aug 2017 - May 2022

**Coursework:** Data Analytics, Pattern Recognition and Machine Learning, Stochastic Optimization, Reinforcement Learning

## TECHNICAL SKILLS

<b>Programming</b>	C, C++, Python (Scikit Learn, Numpy, Pandas, Tensorflow), HTML, CSS, Bootstrap, Javascript, React, PostgreSQL
<b>Software &amp; Tools</b>	ROS (Robot Operating Software), Arduino, MATLAB, Visual Studio, Android Studio, Eagle, LaTeX, MS Office
<b>Certifications</b>	Design and Analysis of Algorithms, Android Development by Google, Trading Algorithms

## PROFESSIONAL EXPERIENCE

**Software Engineer, Quantitative Brokers (Full-time)**

Jul 2022 - Jan 2023

- Developed an internal tool to create, update & seamlessly transmit FIX (Financial Information eXchange) Order messages to the Trading Engine
- Enhanced the user experience of the FIX tool by on-boarding functionalities for Multi-Leg Orders placement which increased efficiency by 15%

**Software Engineer, Quantitative Brokers (Intern)**

May 2021 - Jul 2021

- Strengthened code quality by integrating SonarQube and BlackDuck scanners into Jenkins Pipeline, leading to a 20% reduction in critical issues
- Developed a Full-Stack VueJS Web-App and Enhanced database efficiency by migrating to Decentralized PostgreSQL using ETL Script

**Software Engineer, Big Data Science Research (Intern)**

Apr 2020 - Jun 2020

- Extracted Google Maps data via Selenium & replicated on OpenStreetMap using Folium, Convex Hull algorithm & Web Mercator Projection
- Devised a Map-matching algorithm to connect buildings to roads & Developed software to simulate traffic based on road & building density

**Machine Learning Engineer, Alphabt – TVS Motors Ltd (Intern)**

May 2019 - Jun 2019

- Implemented a Python program to scan the label on vehicles using openCV module which boosted the performance of validation system by 3%
- Enhanced image processing accuracy by constructing a custom Object Detection model with TensorFlow to read engraved texts on vehicles

## PROJECTS

**Surface Texture Analysis (Master's Thesis, Dr. N. Arunachalam, IITM)**

Aug 2021 - May 2022

- Designed a systematic approach achieving 99.6% accuracy in identifying diverse machined surface textures using CV & ML techniques
- Constructed a Neural Network employing statistical features from GLCM for classifying machined surfaces which increased the accuracy

**Analysis of Optimization Algorithms**

Mar 2022 - May 2022

- Assessed the performance of various Stochastic Optimization algorithms on control agents created using OpenAI gym environment
- Developed and applied multiple Gradient Descent algorithms to optimize Deep Q-Network which achieved a 15% boost in agent's return

**Cricket - Multi-agent Game**

Feb 2022 - May 2022

- Fabricated the game as Markov Decision Process utilizing Multi-Armed Bandit algorithms resulting in optimized batting & bowling strategies
- Modeled winning strategies using a 2-player Monte Carlo Tree Search algorithm & elevated match outcomes through optimal action selection

**Hangman Game**

Jan 2022 - Feb 2022

- Designed an algorithm to play the game of Hangman where the player has to guess all the letters of a word, with a limited number of guesses
- Engineered an enhanced N-gram model for capturing letter patterns to improve predictive outcomes and Achieved an accuracy of 62.5%

**Machine Learning Hackathon**

Nov 2020 - Jan 2021

- Optimized bike tour recommendations through exhaustive data preprocessing, data binning and feature engineering on biker's data
- Crafted an ensemble model (XGB, LGBM, CatBoost) with meticulous hyper-parameter tuning which yielded a commendable 0.71 accuracy

**Loan Default Prediction**

Oct 2020 - Dec 2020

- Developed loan default classifier using SMOTE and KNN Imputer for data preprocessing to achieve robust predictive accuracy
- Achieved F1 score of 0.95 by rigorously tuning Hyperparameters in Random Forest Classifier which significantly enhanced learning outcomes

## SCHOLASTIC ACHIEVEMENTS

Received a <b>Scholarship</b> for Graduate Studies by securing merit score in GATE (Graduate Aptitude Test in Engineering)	2021
Awarded <b>Silver prize</b> in the "Terrace Farming Robot for Hilly areas" challenge at <b>Inter IIT Tech Meet</b>	2019
Secured a place in the <b>Asia and Limca Book of Records</b> for most number of robots cleaning an area ( A Clean India Initiative )	2017
Qualified among top 1% in India for Final Level <b>National Mathematics Talent Contest</b> in class XI and XII	2016
Awarded a Special Merit Certificate for Outstanding Performance by securing a place among the top 0.1% in AISSE	2015

## LEADERSHIP EXPERIENCE

<b>Teaching Assistant</b>	Collaborated with Professor to enhance teaching methods and manage evaluations for improved learning outcomes
	Guided 50+ students and facilitated class assignments, projects & meetings to enrich their learning experience
<b>Placement Coordinator</b>	Directed placement tests for 900 students & mentored in placement procedures leading to 20% raise in successful placements
	Engaged with 150+ companies for campus placement and managed end-to-end recruitment process for 5 firms

## EXTRA CURRICULARS

<b>Robotics Club</b>	Unmanned Ground Vehicle   Mobile controlled Cleaning Bot   Water Levitation project for Tech Festival IITM
<b>Sports &amp; Activities</b>	Silver Medal - Inter-Departmental Ultimate Frisbee League   National Cadet Corps   Marathon   Trekking