# CHANDRA GUMMALURU

MACHINE LEARNING ENGINEER

647-907-9818 | chandra.gummaluru@gmail.com | chandra-gummaluru.github.io

## EXPERIENCE

**Artificial Intelligence Course Instructor** | University of Toronto Jan 2021 - Present

- Lectured **1000+ undergraduate students** across **6 courses** covering topics in Artificial Intelligence, Machine Learning, Probabilistic Reasoning, Statistics, Computer Vision, and Data Science
- Coordinated **2 courses** and managed **20+ teaching assistants**
- Exceeded departmental performance in course evaluations and achieved **5/5 overall instructional quality**

**Systems Control Student Researcher** | University of Toronto Jan 2021 - Apr 2024

- Developed a new mathematical framework (using Reinforcement Learning) to simulate routing decisions of self-interested autonomous vehicles and simulate the resulting traffic
- Trained a DNN in TensorFlow to estimate travel demand patterns within Toronto with **98% accuracy**
- Ran Python simulations to show that the new framework can reduce commute times in Toronto by **25%**

**Computer Vision Research Assistant**| Bernhardt-Walther Lab Apr 2020 - Sep 2021

- Trained **2 new CNN models** using OpenCV and PyTorch (with CUDA) to perform inpainting from an incomplete image and a complete outline
- Co-authored a paper published in BMVC 2021 presenting the new models

**Software Engineer** | Coursera Sep 2019 - Sep 2020

- Led a team of **8 engineers** in developing a payment system in Scala to support international transactions for Coursera's enterprise product, used by **50+ organizations**
- Implemented **20+ RESTful APIs** to enable sales teams to provide promotions and discounts to their clients
- Wrote **50+ pages** of detailed technical design documents to guide engineers in implementing the system

**Machine Learning Lead** | University of Toronto Robotics Association May 2019 - Dec 2020

- Led a team of **10+ students** in developing path-planning and obstacle-avoidance algorithms using the Robot Operating System (ROS) for the 2021 International Ground Vehicle Competition (IGCV)
- Trained **2 CNN models** to identify common road obstacles given point-clouds from LIDAR sensors to augment a Simultaneous Localization and Mapping (SLAM) algorithm

## EDUCATION

**MSc in Computer Engineering** | University of Toronto

- Specialized in AI/ML, Game Theory, and Control Systems

**BSc in Computer Engineering** | University of Toronto

- Graduated with honors (80%+ overall average)

## SKILLS

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|---|---|---|---|
| Python (12 yrs) | Java (10 yrs) | C/C++ (8 yrs) | NumPy/SciPy (10 yrs) |
| PyTorch (5 yrs) | OpenCV(5 yrs) | Scala (3 yrs) | TensorFlow (3 yrs) |
| Keras (2 yrs) | Pandas (2 yrs) | SQL (2 yrs) | Scikit-learn (2 yrs) |