



# Gokul Karthik Kumar

MSC COMPUTER VISION @ MBZUAI · BTECH INFORMATION TECHNOLOGY @ ANNA UNIVERSITY  
APPLYING/APPLIED MACHINE LEARNING TO REAL-WORLD PROBLEMS @ MICROSOFT RESEARCH | MBZUAI | TCS RESEARCH | IIT-M  
WON 8 NATIONAL-LEVEL HACKATHON TYPE EVENTS @ UAE & INDIA · WORK PERMIT @ UAE & INDIA  
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## Education

### Mohamed Bin Zayed University of Artificial Intelligence | MSc in Computer Vision

📍 Abu Dhabi, UAE

CURRENT CGPA: 4 / 4 | ADVISOR: DR. KARTHIK NANDAKUMAR

2021/Aug – 2023/May

- Coursework: Machine Learning, Computer Vision, Geometry for Computer Vision, Visual Object Detection & Recognition, Trustworthy AI
- MuCoT: Multilingual Contrastive Training Approach for Question Answering in Low-resource Languages (NLP)
- Empirical Study of Self Supervised Learning Approaches for Object Detection with Transformers (Computer Vision)
- Hate-CLIPper: Multimodal Hateful Meme Classification with Explicit Cross-modal Interaction of CLIP features (NLP + Computer Vision)
- IndianSpeech: Text to Speech for Indian languages with cross-lingual voice cloning (NLP + Speech)

### Anna University | BTech in Information Technology

📍 Madurai, India

CGPA: 9.74 / 10 | DEPARTMENT RANK: 1 / 130 | THIAGARAJAR COLLEGE OF ENGINEERING

2015/Jul – 2019/May

- Awarded Gold Medal of Excellence (Overall Best Outgoing Student) out of 1000+ graduating students in 2019 batch
- Relevant Coursework: Object Oriented Programming, Data Structures and Algorithms, Web Technologies, Data Base Management System, Software Engineering, Big Data, Data Mining

## Experience

### Microsoft Research | Machine Learning Research Intern

📍 Bengaluru, India

MANAGER: DR. PRATYUSH KUMAR

2022/Jun – 2022/Aug

- Building IndianSpeech: Text-to-speech for Indian languages with zero-shot cross-lingual voice cloning

### Mohamed Bin Zayed University of Artificial Intelligence | Machine Learning Research Assistant

📍 Abu Dhabi, UAE

ADVISOR: DR. KARTHIK NANDAKUMAR

2021/Jan – 2021/Jul

- Developed DoENet, a double encoder using Variational Autoencoders and GANs, for unsupervised adversarial attack classification

### TCS Research | Machine Learning Developer

📍 Chennai, India

MANAGER: DR. AVINASH ACHAR ACADEMIC COLLABORATOR: DR. BALARAMAN RAVINDRAN, IIT MADRAS

2019/Apr – 2020/Nov

- Improved sales prediction models for the retails client using N-Gram models and Deep Neural Networks like RNNs and LSTM
- Implemented latest spatio-temporal travel time prediction models as baselines for evaluating temporal difference prediction models
- Developed intelligent employee profile retrieval system using text mining techniques
- Developed computer vision pipelines to solve curved text extraction, perspective correction etc

### IIT Madras / One Fourth Labs / AI4Bharat | Machine Learning Project Intern

📍 Chennai, India

ADVISORS: DR. PRATYUSH KUMAR, DR. MITESH KHAPRA

2018/Dec – 2019/Mar

- Developed robust scene text recognition architecture for Indian languages
- Implemented Efficient and Accurate Scene Text Detector (EAST) for Indian signboard scene text detection
- Developed handwriting recognition system using Convolutional Recurrent Neural Networks for automatic answer-script evaluation
- Set up programming competitions for the PadhAI Deep Learning course

## Skills

**Technologies** Deep Learning, Computer Vision, NLP, Speech Processing, Data Science, Social Network Analysis

**Programming** Python, C++, R, MySQL,  $\text{\LaTeX}$

**Python Packages** PyTorch, Hugging Face, Keras, Tensorflow, Scikit-Learn, OpenCV, NLTK, NetworkX, Numpy, Pandas, Matplotlib

**Platforms** Google Cloud Platform, Amazon Web Services, MS Excel, Tableau, QlikView

**Software Frameworks** Git, Streamlit, FastAPI, Flask, HTML, CSS, JS, Shiny

## Honors

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- 2021 **Winning Team** in the ADAFSA Agrithon for developing visual plant disease diagnosis, optimal animal clinic placement etc.
- 2021 **Finished Second** in the GITECH x AI-everything High Flyer challenge for the AI-powered dubbing presentation
- 2021 **Selected among the Top 10 teams** for the deep tech startup incubation program by Khalifa Innovation Center
- 2020 **Innovation Pride Award** by TCS for winning the Image Enrichment Challenge 2 out of 100+ participants
- 2020 **Winning Team Lead** of TCS DDS ML Hackathon out of 8 teams for developing the corn-hybrid recommendation system
- 2019 **Special Initiative Award** by TCS for the data driven solution to DDS profile hunt
- 2019 **Winning Team Lead** of IIT Madras AI Hackathon out of 500+ teams for developing safe route identification system
- 2019 **Gold Medal of Excellence** for the best outgoing student out of 1000+ students of TCE
- 2018 **Winning Team Lead** of Guvi-HCL AI Hackathon out of 30+ teams for developing the qualitative recommendation app
- 2017 **All India Rank 1** in the NPTEL course 'Social Networks'
- 2017 **Top 8** in the MHRD Smart India Hackathon out of Top 50 teams for the development of smart evaluation application

## Certifications

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- 2021 **Generative Adversarial Networks (GANs) Specialization**, By DeepLearning.ai on Coursera
- 2020 **Futures Thinking Specialization**, By Institute for the Future on Coursera
- 2020 **Computer Vision Nanodegree**, By Udacity
- 2020 **Deep Learning Specialization**, By DeepLearning.ai on Coursera
- 2018 **Data Science Summer School**, By ACM and IIT Madras at Goa University
- 2018 **Data Analyst Career Track**, By DataCamp
- 2017 **Applied Data Science Specialization**, By University of Michigan on Coursera
- 2017 **Social Networks Course**, By IIT Madras on NPTEL (All India Rank 1)

## Mini Projects

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- 2020 **Standard Deep Learning Projects** - Baby Name Generation, Neural Style Transfer, Image Segmentation etc.
- 2020 **Cryptocurrency Market Prediction** - Using Long- and Short-term Time-series network (LSTNet).
- 2017 **GitHub Social Network Analysis** - Exploration of data science repositories

## Publications

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- MuCoT: Multilingual Contrastive Training For Question-Answering In Low-resource Languages** 📍 Dublin, Ireland  
**GOKUL KARTHIK KUMAR**, ABHISHEK SINGH GEHLOT, SAHAL SHAJI MULLAPPILLY, KARTHIK NANDAKUMAR May-2022  
**ACL-W**: Association for Computational Linguistics - Workshop on Speech and Language Technologies for Dravidian Languages
- Method And System For Forecasting Sales Based On N-Gram Model** 📍 Online  
**GOKUL KARTHIK**, AVINASH ACHAR, BALARAMAN RAVINDRAN Mar-2021  
**US Patent**: US 2022/0129928 A1
- Dynamic Bus Arrival Time Prediction: A Temporal Difference Learning Approach** 📍 Online  
VIGNESH LKP, AVINASH ACHAR, **GOKUL KARTHIK** Jul-2020  
**IJCNN**: International Joint Conference on Neural Networks

## Reference

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- Dr. Karthik Nandakumar** ✉ [karthik.nandakumar@mbzuai.ac.ae](mailto:karthik.nandakumar@mbzuai.ac.ae)  
ASSOCIATE PROFESSOR, MOHAMED BIN ZAYED UNIVERSITY OF ARTIFICIAL INTELLIGENCE Advisor in MSc & internship at MBZUAI
- Dr. Pratyush Kumar** ✉ [pratykumar@microsoft.com](mailto:pratykumar@microsoft.com)  
SENIOR RESEARCHER, MICROSOFT RESEARCH Manager in internships at Microsoft Research & IIT-M