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 hackathons @ UAE | India · Open to full-time Machine Learning roles from 2023/May

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Education

Mohamed Bin Zayed University of Artificial Intelligence | MSc in Computer Vision   📍*Abu Dhabi, UAE*

CURRENT CGPA: 3.9 / 4 | ADVISOR: DR. KARTHIK NANDAKUMAR   *2021/Aug – 2023/May*
- Coursework: Machine Learning, Computer Vision, Geometry for Computer Vision, Visual Object Detection & Recognition, Trustworthy AI

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*
- Experimented different acoustic models and vocoders for Text-To-Speech in Indian languages

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 LSTNet
- 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

Honors

Year	
2021	**Winning Team** in the ADAFSA Agrithon for developing visual plant disease diagnosis, optimal animal clinic placement etc.
2021	**Finished Second** in the GITEX 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

Skills

Technologies	Deep Learning, Computer Vision, NLP, Speech Processing, Data Science, Social Network Analysis
Programming	Python, C++, R, MySQL, 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

Certifications

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

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

Hate-CLIPper: Multimodal Hateful Meme Classification based on Cross-modal Interaction of CLIP features 　📍*Abu Dhabi, UAE*
Gokul Karthik Kumar, Karthik Nandakumar　　　　　　　　　　　　　　　　　　　　　　　　　　　*Dec-2022*
EMNLP Workshop on NLP for Positive Impact (#nlp #computer-vision)

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 Workshop on Speech and Language Technologies for Dravidian Languages (#nlp)

An Empirical Study Of Self-supervised Learning Approaches For Object Detection With Transformers　📍*Online*
Gokul Karthik Kumar, Sahal Shaji Mullappilly, Abhishek Singh Gehlot　　　　　　　　　　　　　*May-2022*
ArXiv (#computer-vision)

Method And System For Forecasting Sales Based On N-Gram Model　　　　　　　　　　　　　📍*Online*
Gokul Karthik, Avinash Achar, Balaraman Ravindran　　　　　　　　　　　　　　　　　　　　　*Mar-2021*
US Patent (#time-series)

Dynamic Bus Arrival Time Prediction: A Temporal Difference Learning Approach　　　　　　　📍*Online*
Vignesh LKP, Avinash Achar, **Gokul Karthik**　　　　　　　　　　　　　　　　　　　　　　　　　*Jul-2020*
IJCNN (#time-series)

Reference

Dr. Karthik Nandakumar　　　　　　　　　　　　　　　　　　✉ *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*
Senior Researcher, Microsoft Research　　　　　　　*Manager in internships at Microsoft Research & IIT-M*