

Professional Experience

Senior ML Engineer	Qualcomm Corporate R&D	November'20 – Ongoing
---------------------------	-----------------------------------	------------------------------

Design and implement software modules or components for AI/DNN frameworks and tools in C++ & Python.

- Designed and implemented tools for optimizing ONNX models for different hardware backends.
- Implemented custom nodes/operators by fusing specific set of nodes to a single kernel for better performance on AI100 and PyTorch runtime, resulting in 30% boost in the performance.
- Worked with GNN based architecture for pre-processing of DNNs before compilation and filed a patent.

Research Assistant	IIT-Bombay	August'20 – October'20
---------------------------	-------------------	-------------------------------

Understand Emotions in Sarcasm: A Multi-modal Approach

- Worked in joint collaboration of IBM and IIT Bombay on Understanding emotions in Sarcasm.
- Trained a model with self-attention and cross-attention of video, audio and textual features.
- Result - Proved that emotion information was necessary to identify sarcasm more precisely. Experiments with emotion information had 15% better performance.

Teaching Assistant	IIT-Bombay	July'18 – July'20
---------------------------	-------------------	--------------------------

- Courses: Computer Programming and Utilization, Embedded Systems.
- Promoted to Senior TA in July'19; led weekly meetings and supervised five other TAs.

Patent and Publication

U.S. Patent application 18/330,253

- "Pre-Processing For Deep Neural Network Compilation Using Graph Neural Networks", June 06,2023. (Pending)

Home Automation Using Panoramic Image Using IoT

- Published in 2018 International Conference on Recent Innovations in Electrical, Electronics & Communication Engineering (ICRIEECE).

Tech stack for software development and ML

- Programming: Python, C++
- ML Frameworks: PyTorch, ONNX, ONNX Runtime.
- Others: Git, Docker, GLOW (Machine Learning Compiler).

Education

Mumbai, IN	IIT-Bombay	July'18 - July'20
-------------------	-------------------	--------------------------

- M.Tech in Computer Science and Engineering, July 2020. CPI: **8.43** (on scale of 10).
- Graduate Coursework: Foundations in Machine Learning; Advance Machine Learning; Mathematics for Visual Computing; Combinatorics; Algorithms and Complexity; Relational Databases.

Mumbai, IN	University of Mubai	June'14 – June'18
-------------------	----------------------------	--------------------------

- B.E. in Computer Engineering, June 2018. CPI: **9.07** (on scale of 10).

Academic Projects

- **Master Thesis** on Computational Model to Understand Emotions in Sarcasm. (2020)
 - Created dataset 'emo-UStARD' by annotating 'MUSARD' with 8 primary emotions, arousal & valence values.
- **ML course project** on Insincere Question detection in Quora. (2019)
- **B.E project** on Home Automation Using Panoramic Image Using IoT. (2018)