Karan K. Thakkar

Birth Date:	4 April 1998	Social:	LinkedIn | GitHub	Current city:	Baroda, India
Phone:	+91 97252-00584	Website:	karan-thakkar.website	email:	kkt31415@gmail.com

Education

Jul 2016 - Jun 2020
Vellore, India

B.Tech Electronics and Communication Engineering
Vellore Institute of Technology (VIT)
CGPA: **9.33/10.0** | Detailed List of Exams
Thesis:"Emergence of Deep Learning as a potential solution for Detection, Recovery and De-noising of Signals in Communication Systems "
Advisor: Prof. Budhaditya Bhattacharyya

Research and Technical Experience

Jul '20 - Present
Delhi, India

Machine Learning Engineer at DeepSync Technologies
Part of the core research and product development team

- Investigated the performance of auto-regressive Text-to-Speech (TTS) models vs non auto-regressive models.
- Built a fast, efficient and high quality end to end TTS system from scratch inspired by Microsoft's FastSpeech2.
- Increased speech inference time by 7x when compared to Tachotron.
- Co-developed SyncGAN vocoder. High quality and super fast mel to audio generator. (Research paper WIP) | Samples
- Designed a test and automated the pre-processing for any TTS dataset.
- Current work targeted on Super Resolution Mel-Spectograms based TTS with emotion and accent control.

Reference: Rishikesh Kumar (CTO, DeepSync Technologies)

Jul 2018 - Apr 2020
Vellore, India

Undergraduate Research Fellow - Deep Learning | Speech Processing | Signal Processing | Wireless Communications
Undergraduate Research Experience - URE004 at VIT Vellore

- "Emergence of Deep Learning as a potential solution for Detection, Recovery and De-noising of Signals in Communication Systems"
  - Reviewed various channel estimation and deep learning techniques applied in communication system to further my research. | Conference Paper
  - Examined effects of neural net complexity, activation function, cyclic prefix, and pilot symbols on deep learning based channel estimation and signal detection. | Submitted Paper
- "Speech Emotion and EDM genre Recognition using non-traditional features"
  - Derived audio features unlike the conventional features to classify emotions on speech and genre on EDM.
  - The new feature is based on chirp wavelet and voltera function. It can capture pitch and energy features in one single vector. | Github Repo

Reference: Prof Budhaditya Bhattacharyya And Prof Sudhakar M S

APR 2019 - May 2019
Baroda, India

Electrical Engineering Intern at Munjal Auto Industries Ltd - Hero Honda Group
Automation Team

- Created a prototype for machine cycle calculation of MIG Welding Robot using Image Processing on Raspberry Pi, Pi Cam and OpenCV. | Demo Video
- Contributed in automation of Hydraulic Press Machine integrating various sensors.
- Optimised code for MIG Welding operation that reduced the time of operation by 3 secs/process (Yashkawa Robot; PLC Coding).

Reference: Amit Salunke (Head Industrial Engineering, Munjal Auto)

MAY 2018 - JUL 2018
Singapore

Academic Intern at National University of Singapore (NUS) and Hewlett-Packard Edu.
Summer Internship and Skill Training

- Machine Learning and Data Mining Academic intern under the guidance of Dr Tan Wee Kek and Dr Wee Wang.
- Built NLP tool for sentiment analysis of consumer review data with 92.2 percent accuracy (top among competitors).
- Explored Hadoop architecture, system administration and power distributed NN training.
- Gained experience in working with Hadoop, Cloudera, Apache Spark, SQL, VMware and AWS.

Reference: Dr Tan Wee Kek and Dr Wei Wang

Additional Experience

FEB 2020 - APR 2020
Vellore, India

Student Intern at Vellore Institute of Technology (VIT) Vice President's Office
Fellow of Education and Startup Resources Assesment
Identified 4 startups on behalf of Vice President's Office to provide required support. Evaluated the curriculum at VIT Bhopal Campus in contrast with VIT Vellore Campus to improve diversity in curriculum. Collaborated with a team of 5 to reduce drug and alcohol use near Vellore Region.
Reference: Kadhambari S. Viswanathan (Assistant Vice President VIT)

Skills

Coding :	Python, Matlab, Java, C++	Frameworks:	Pytorch, Tensorflow 2.0, Kaldi
Tech. :	Azure, GCP, GANs, Ubuntu & linux	Non Tech. :	Painting, Sketching, Violin, Surfing

Selective Academic Projects

Smart Goggle for blind people to see using ears [Report] • International Robotics Championship 2017 IITB • Fidget spinner based RPM detector and stress analyser [Report] • Face Emotion Recognition using CNN and Harr Cascade [Report] • Adaptive source encoding scheme using logarithms [Report] • EPICS (Engineering Projects in Community Service) in IEEE VIT Purdue University (USA) Agricultural. (Assisted farmers with the use of low cost technology in farming [Report])

Publications And Academic Service

1. K. Thakkar, A. Goyal and B. Bhattacharyya, "Deep Learning and Channel Estimation," 2020 6th International Conference on Advanced Computing and Communication Systems (ICACCS), Coimbatore, India, 2020, pp. 745-751, doi: 10.1109/ICACCS48705.2020.9074414. [Link to Publication]
2. K. Thakkar, A. Goyal and B. Bhattacharyya, "Emergence of Deep Learning as a potential solution for Detection, Recovery andDe-noising of Signals in Communication Systems". International Journal of Intelligent Networks. (Accepted) [First Draft]
3. Reviewed for the journal "Transactions on Emerging Telecommunications Technologies". [Verified Review on Publons]

Achievements and Extra-Curricular Activities

- Won 2 Business Case Competition: Ideathon 2020 and Finixic 2018.
- VITEEE Scholarship awardee worth Rs. 2 Lakh.
- Art Achievement - Bronze medal at 40th International Children's art exhibition Japan 2010, Avantika Talent Search Certificate of Honour, Exhibited two paintings at Maharaja Sayajirao University Fine Arts department.
- Indian Record - Mentioned in LIMCA Book of Records for the Largest Warli Painting of the World (2014) based on the theme of Ramayana – The great Indian Mythology.
- Regional winner of National Robotics Championship 2014; Winner Mathematical Convention 2013.
- Best performer at Entrepreneurship Development Institute of India, Ahmedabad- Summer 2013.
- Model Rocketry Championship 2013 Finalist; with the design recognised as the most innovative one.