VINEET GARG

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EDUCATION

Texas A&M University, College Station, TX *Aug'17 – May'19*

Master of Science in Electrical Engineering, GPA – 4.0/4.0

Courses – Machine Learning, Deep Learning, Reinforcement Learning, Probabilistic Graphical Models, Software Engineering

Indian Institute of Technology (IIT) Kanpur, India *Jul'11 – Jun'15*

B.Tech in Electrical Engineering, GPA – 7.9/10

Courses – Digital Signal Processing, Image Processing, Speech Signal Processing, Convex Optimization

PUBLICATIONS

- S. Adya, **V. Garg**, S. Sigtia, P. Simha, and C. Dhir, "Hybrid Transformer/CTC Networks for Hardware Efficient Voice Triggering," in Proceedings of INTERSPEECH 2020
- S. Sigtia, J. Bridle, H. Richards, P. Clark, E. Marchi, and **V. Garg**, "Progressive Voice Trigger Detection: Accuracy vs Latency," in Proceedings of ICASSP 2021
- **V. Garg**, W. Chang, S. Sigtia, S. Adya, P. Simha, P. Dighe, and C. Dhir, "Streaming transformer for hardware efficient voice trigger detection and false trigger mitigation," in Proceedings of INTERSPEECH 2021
- O. Rudovic, A. Bindal, **V. Garg**, P. Simha, P. Dighe, and S. Kajarekar, "Streaming on-device detection of device directed speech from voice and touch-based invocation," arxiv:2110.04656, 2021

PROFESSIONAL EXPERIENCE

Apple Inc

Machine Learning Engineer *Jul'19 – Present*

- Responsible for research and development activities related to natural interaction using Apple's voice assistant Siri
- Performing a wide variety of speech-related engineering activities, including development of tools for efficient deployment of on-device acoustic models for improved customer experience
- Developing techniques for leveraging large quantities of data for building state-of-the-art Siri speech recognition systems.

Systemantics India

Project Engineer *Jun'15 – Jun'17*

- Coordinated with mechanical and software teams to develop India's first commercial 6-axis industrial robot
- Contributed to the embedded software development for distributed robot architecture, motion control and planning
- Designed and experimented control system models for vibration free motion of 6-axis robot at speeds as high as 20 rpm

SKILLS

Programming Languages: C, C++, Python (TensorFlow, Keras, PyTorch), Spark

Machine Learning: Time Series, Hypothesis Testing, Classification and Regression, Deep Learning

RESEARCH EXPERIENCE

Deep Learning: Object Tracking and Semantic Segmentation in videos *Aug'18 – Mar'19*

- Designed deep learning algorithms for instance and semantic segmentation in computer vision applications
- Combined motion vector and region based Convolutional nets to achieve real-time object tracking in videos leading to reduction in inference time by up to 40%

Reinforcement Learning: Meta Adversarial RL *Sept'18 – Dec'18*

- Designed robust reinforcement learning algorithms for agents by training adversaries using meta learning

Probabilistic Graphical Models: Topic Modelling in Text Data *Mar'17 –Apr'17*

- Performed knowledge discovery and sentiment analysis in large text datasets using generative algorithms such as Latent Dirichlet Allocation and Hierarchical LDA

HONORS

- Received graduate research scholarship from Electrical Engineering department at Texas A&M University
- Recipient of Boeing-IIT Kanpur Scholarship, 2013-14 for undergraduate research in autonomous robotics