Tarun Kalluri

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AREAS OF INTEREST

Computer Vision, Machine Learning, Deep Learning, Information Theory.

EDUCATION

2012-16 B-Tech , Indian Institute of Technology (I.I.T.), Guwahati. **9.03/10.0**
Major: Electronics and Communication Engineering (ECE)
Minor: Computer Science and Engineering (CSE)
Thesis [pdf]: Stochastic Energy Modeling in Wireless Networks

EXPERIENCE

2017-Present *Research Assistant, CVIT Lab, IIIT Hyderabad*
Working on problems related to natural scene understanding using deep learning techniques on large scale datasets.

2016-17 *Data Scientist, Oracle India Pvt. Ltd., Bengaluru*
Worked with SaaS Q&A team. Built an end-to-end automation tool *Spyder* to monitor client side database upgrade and down time by statistically analyzing error logs.

RESEARCH PROJECTS

Sep '17 - Present Universal Semi-supervised Semantic Segmentation
Guide: Dr. Manmohan Chandraker, UCSD and Dr. CV Jawahar, IIIT-Hyderabad
Project involved learning segmentation models from multiple large scale driving datasets with special focus on improving the state-of-the art performance on autonomous driving on Indian roads.

Oct '17 - Present Physical Force Field Approximation Using Deep Learning [Poster]
Guide: Dr. CV Jawahar ,IIIT-Hyderabad
This project aims to automatically calculate and calibrate inter molecular forces in regular objects using data-driven deep learning techniques.

Aug '15- May '16 Stochastic Energy Modeling in Wireless Networks (Bachelor Thesis Project)
Guide: Dr. Tony Jacob, Department of EEE, IIT-Guwahati
This research project aims at formulating stochastic and mathematical models for energy characterization in dense wireless sensor networks.

May-July '15 Spectrum Sharing in Energy Harvesting Wireless Networks
Guide: Dr. Vivek Ashok Bohara, WiroComm Research Labs, IIIT-Delhi.
Worked on analysis of dense sensor networks and designed relaying protocols in spectrum sharing setup with energy harvesting nodes under time splitting and power sharing models.

Publications

SUBM01 Kalluri, T., Varma, G., Chandraker, M., Jawahar, C.V.. Universal Semi-supervised semantic segmentation. *In Submission CVPR, 2019.* [Preprint]

JRNL01 Kalluri, T., Peer, M., Bohara, V. A., & Dias, U. S. (2018). Cooperative spectrum sharing-based relaying protocols with wireless energy harvesting cognitive user. IET Communications, 12(7). [pdf]

CONF01 Kalluri, T., & Bohara, V. A. (2016, June). Regenerative relaying in energy harvesting cognitive radio networks. In Networks and Communications (EuCNC), 2016 European Conference on. [pdf]

CONF02 Peer, M., **Kalluri, T.**, Bohara, V. A., da Costa, D. B., & Dias, U. S. (2017, April). A time-splitting cooperative spectrum sharing amplify-and-forward relaying protocol with energy harvesting cognitive user. In Wireless and Microwave Technology Conference (WAMICON), 2017 IEEE 18th (pp. 1-6). IEEE. [pdf]

Relevant Courses | Detailed Curriculum

- Pattern Recognition and Machine Learning*
- Computer Vision*
- Image Processing*
- Probability and Random Processes
- Game Theory and Economics*
- Deep Learning for Computer Vision (MOOC, CS231 by Stanford Univ.)
- Data Structures and Algorithms
- Digital Signal Processing*
- Queuing Systems*
- Topics in Information Theory*
- Linear Algebra(Mathematics I)*
- Natural Language Processing (MOOC, CS224 by Stanford Univ.)

*Obtained AA/AS

Awards and Honors

- Won the SMS Classification Challenge, participated in the Video Action Recognition challenge at Samsung R&D Hackathon in Bengaluru. Also participated in Microsoft DeepLearning hackathon on Author Identification at Hyderabad in Dec 2017.
- Selected to participate in the Machine Learning Summer School (MLSS) conducted at IIIT-Hyderabad in July 2018 focusing on advances in modern AI.
- Active Participant in various online competitions in Deep Learning including Kaggle, and active contributor to open source research.
- Highly proficient in Python, C++, bash scripting and deep learning packages like Tensorflow, PyTorch and Keras.