Jyoti Aneja
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Education

- **University of Illinois, Urbana-Champaign**
  Ph.D. *Dec. 2015 - May 2021(Expected)*
  - **Research Interests:** Machine Learning, Graphical Models and Computer Vision: Using generative and discriminative models for language vision tasks. Applying techniques learnt from spin model physics to computer vision problems.
    Advisor: Dr. Alexander Schwing

- **University of Illinois, Urbana-Champaign**
  Master of Science in Physics; GPA: 3.80 *Aug. 2013 – Dec 2015*
  - Research in computational condensed matter physics. Advisor: Dr. Bryan Clark.

Publications

- **Image Captioning Diversity under the Radar**: Xiaoming Zhao, *Jyoti Aneja, Harsh Agrawal, Alexander Schwing. Under Submission*
- **NCP-VAE: Variational Autoencoders with Noise Contrastive Priors**: *Jyoti Aneja, Alexander Schwing, Jan Kautz, Arash Vahdat. Under Submission*
- **Sequential Latent Spaces for Modeling the Intention During Diverse Image Captioning**: *Jyoti Aneja*, Harsh Agrawal*, Dhruv Batra, Alexander Schwing. Accepted at ICCV 2019*
- 1^{st} **Runner-up in the Text-VQA Challenge-2019**: Harsh Agrawal, *Jyoti Aneja, Maghav Kumar, Alexander Schwing. Organized at the VQA Workshop at CVPR 2019*
- **Fast, Diverse and Accurate Image Captioning Guided By Part-of-Speech**: Aditya Deshpande*, *Jyoti Aneja*, Liwei Wang, Alexander Schwing, David Forsyth. Accepted at CVPR 2019 [ORAL]*
- **Convolutional Image Captioning**: *Jyoti Aneja*, Aditya Deshpande*, Alexander Schwing*; Conference on Computer Vision and Pattern Recognition, CVPR 2018.
- **Gauge Symmetry of the 2 Dimensional Quantum Spin Liquid in Quantum Kagome Ice**: *Jyoti Aneja, Bryan Clark*; International Summer School on Computational Quantum Materials 2016 -University of Sherbrooke
- **Negative Ion Rich Plasmas in Continuous and Pulsed Wave Modes in a Minimum-B Magnetic Field**: Debaprasad Sahu, Shail Pandey *Jyoti Aneja, Sudeep Bhattacharjee*; American Institute of Physics-Physics of Plasmas
  * : equal contribution

Industry Experience

- **NVIDIA Research** Santa Clara, CA
  Summer Internship *June 2020 - August 2020*
  - **NCP-VAE: Variational Autoencoders with Noise Contrastive Priors**: We address the prior hole problem in VAEs using an energy-based prior, trained with noise contrastive estimation. Mentor: Dr. Arash Vahdat, Dr.Jan Kautz
- **Microsoft Research** Redmond, WA
  Summer Internship *May 2019 - Aug 2019*
  - **Captioning in the Wild**: Working on developing image captioning models that can describe scenes and objects that were not seen during training. Mentor: Dr. Neel Joshi, Dr. Besmira Nushi, Dr.Kenneth Tran, Dr. Hamid Palangi
- **Snap Research** Los Angeles, CA
  Summer Internship *May 2018 - Aug 2018*
  - **Captioning and Graph Convolutions**: Worked on using graph convolution networks to improve diversity in current captioning models. Mentors: Dr. Ning Zhang, Ziyu Zhang

Awards and Recognition

- **Session Chair**: Applied Machine Learning, CSL Student Conference, UIUC-2019
- **Departmental Travel Awards**: Awarded thrice. Once to present CS paper at CVPR-2018 and twice for presenting physics research at Princeton University and University of Sherbrooke, Canada.
- **Excellent TA - UIUC**: Awarded several times for CS and Physics courses
- **Academic Excellence award**: Best Graduating Student, IIT-Kanpur.
- **DST-DFG award**: Awarded by the Department of Science And Technology, Government of India and German Research Foundation, selected for participating in meeting of The Nobel Laureates Students at Lindau, Germany.

Academic Duties

- **Conference Reviewer**: NeurIPS, CVPR, ICCV, ECCV, ICLR, IJCV(Journal), WICV-CVPR(Workshop)
- **Teaching Assistant - CS**: Machine Learning, Applied Machine Learning, Numerical Methods, Data Structures Assisted in creating theory and coding assignments. Conducted weekly office hours to help students with home works and concepts.
- **Teaching Assistant - Physics**: Classical Mechanics, Quantum Mechanics, Electrodynamics, Statistical Physics. Conducted weekly office hours involving blackboard teaching and tutorial sessions.