PAPER LIST

Compositionality and systematic generalization

- **October 4**
  A Benchmark for Systematic Generalization in Grounded Language Understanding
  Laura Ruis, Jacob Andreas, Marco Baroni, Diane Bouchacourt, Brenden M. Lake. NeurIPS 2020.
- **October 6**
  Benchmark for Compositional Text-to-Image Synthesis
  Dong Huk Park, Samaneh Azadi, Xihui Liu, Trevor Darrell, Anna Rohrbach. NeurIPS 2021 Datasets and Benchmarks Track.

Multimodal representation learning

- **October 11**
  Learning Hierarchical Discrete Linguistic Units from Visually-Grounded Speech
  David Harwath, Wei-Ning Hsu, James Glass. ICLR 2020.
- **October 13**
  Learning to Learn Words from Visual Scenes
  Dídac Surís, Dave Epstein, Heng Ji, Shih-Fu Chang, Carl Vondrick. ECCV 2020.

Graph neural networks

- **October 18**
  Learning Particle Dynamics for Manipulating Rigid Bodies, Deformable Objects, and Fluids
  Yunzhu Li, Jiajun Wu, Russ Tedrake, Joshua B. Tenenbaum, Antonio Torralba. ICLR 2019.
- **October 20**
  Causal Discovery in Physical Systems from Videos
  Yunzhu Li, Antonio Torralba, Anima Anandkumar, Dieter Fox, Animesh Garg. NeurIPS 2020.

Object-centric representation learning

- **October 25**
  Learning Physical Graph Representations from Visual Scenes
  Daniel Bear, Chaofei Fan, Damian Mrowca, Yunzhu Li, Seth Alter, Aran Nayebi, Jeremy Schwartz, Li F. Fei-Fei, Jiajun Wu, Josh Tenenbaum, Daniel L. Yamins. NeurIPS 2020.
- **October 27**
  SIMONe: View-Invariant, Temporally-Abstracted Object Representations via Unsupervised Video Decomposition
  Rishabh Kabra, Daniel Zoran, Goker Erdogan, Loic Matthey, Antonia Creswell, Matthew Botvinick, Alexander Lerchner, Christopher P. Burgess. arXiv preprint arXiv:2106.03849, 2021.

Neuro-symbolic approaches

- **November 1**
  Grounding Physical Concepts of Objects and Events Through Dynamic Visual Reasoning
  Zhenfang Chen, Jiayuan Mao, Jiajun Wu, Kwan-Yee Kenneth Wong, Joshua B. Tenenbaum, Chuang Gan. ICLR 2021.

- **November 3**
  PIGLeT: Language Grounding Through Neuro-Symbolic Interaction in a 3D World
  Rowan Zellers, Ari Holtzman, Matthew Peters, Roozbeh Mottaghi, Aniruddha Kembhavi, Ali Farhadi, Yejin Choi. ACL 2021.

Neural implicit representations

- **November 8**
  Implicit neural representations with periodic activation functions
  Vincent Sitzmann, Julien Martel, Alexander Bergman, David Lindell, Gordon Wetzstein. NeurIPS 2020.
- **November 10**
  pi-GAN: Periodic Implicit Generative Adversarial Networks for 3D-Aware Image Synthesis
  Eric R. Chan, Marco Monteiro, Petr Kellnhofer, Jiajun Wu, Gordon Wetzstein. CVPR 2021.

Dynamic networks

- **November 29**
  Semantically-Guided Representation Learning for Self-Supervised Monocular Depth
  Vitor Guizilini, Rui Hou, Jie Li, Rares Ambrus, Adrien Gaidon. ICLR 2020.
- **December 1**
  Spatially-Adaptive Pixelwise Networks for Fast Image Translation
  Tamar Rott Shaham, Michael Gharbi, Richard Zhang, Eli Shechtman, Tomer Michaeli. CVPR 2021.

Neural rendering

- **December 8**
  Understanding Object Dynamics for Interactive Image-to-Video Synthesis
  Andreas Blattmann, Timo Milbich, Michael Dorkenwald, Björn Ommer. CVPR 2020.
- **December 10**
  PixelSynth: Generating a 3D-Consistent Experience from a Single Image
  Chris Rockwell, David F. Fouhey, Justin Johnson. ICCV 2021.

Memory and attention

- **December 13**
  Learning to Simulate Dynamic Environments With GameGAN
  Seung Wook Kim, Yuhao Zhou, Jonah Philion, Antonio Torralba, Sanja Fidler. CVPR 2020.
- **December 15**
  Kanerva++: Extending the Kanerva Machine With Differentiable, Locally Block Allocated Latent Memory
  Jason Ramapuram, Yan Wu, Alexandros Kalousis. ICLR 2021.

Vision Transformers

- **December 20**
  An Image is Worth 16x16 Words: Transformers for Image Recognition at Scale
  Alexey Dosovitskiy, Lucas Beyer, Alexander Kolesnikov, Dirk Weissenborn, Xiaohua Zhai, Thomas Unterthiner, Mostafa Dehghani, Matthias Minderer, Georg Heigold, Sylvain Gelly, Jakob Uszkoreit, Neil Houlsby. ICLR 2021.

- **December 22**
  Vision Transformers for Dense Prediction
  Ren Ranftl, Alexey Bochkovskiy, Vladlen Koltun. ICCV 2021.

Deep implicit layers

- **December 27**
  Multiscale Deep Equilibrium Models
  Shaojie Bai, Vladlen Koltun, J. Zico Kolter. NeurIPS 2020.
- **December 29**
  Vid-ODE: Continuous-Time Video Generation with Neural Ordinary Differential Equation
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