

# Visual Question Answering and Deep Learning : Are we building a ladder to the moon ?

Monday, March 1, 2021, 16:30 MST

Via Zoom: <https://asu.zoom.us/j/89817732811>

## Abstract

The task of visual question answering is an exciting opportunity for researchers from computer vision and NLP to tackle a practical AI-complete task. Advances in deep learning have made aspects of the task seemingly within reach. However, the more we look back, the more issues we find: biased datasets, metrics that do not evaluate desired behaviours, models giving right answers for the wrong reasons, etc. This talk proposes to take a step back and reflect on capabilities that are within reach of current machine learning methods, and those that will require radically different approaches. We look through the lens of causal reasoning to identify fundamental limitations of observational training data. We will also discuss how the success of data augmentation, multi-environment training, and counterfactual training examples can all be explained with fundamental causal principles. The analysis is enlightening on the type of information missing from typical datasets, where else to find it, and how to test our models for the behaviours we really care about.



**Damien Teney**  
Australian Institute for  
Machine Learning  
University of Adelaide

## Bio

Dr Damien Teney is a Senior Researcher at the Australian Institute for Machine Learning, part of the University of Adelaide. He is about to join the Idiap research lab in Martigny, Switzerland. He was previously affiliated with Carnegie Mellon University (USA), the University of Bath (UK), and the University of Innsbruck (Austria). Damien received his Ph.D. in Computer Science at the University of Liège (Belgium), advised by Justus Piater. His research interests are at the intersection of computer vision and machine learning.

Host: Pratyay Banerjee, Yezhou Yang, Chitta Baral.

*The Active Perception Group explores robotic visual learning, tying together the fields of active vision, natural language processing and AI reasoning.*

**ASU** Ira A. Fulton Schools of  
**Engineering**

**Arizona State University**

**School of Computing, Informatics  
and Decision Systems Engineering**