



DSC 180 A01 - EXPLAINABLE AI DISCUSSION 8: GRAD-CAM

Jürgen P. Schulze, Ph.D.
University of California, San Diego
Fall Quarter 2020

ANNOUNCEMENTS

- Instructor office hour Fridays 10-11am
- Final Participation due Dec 8th at noon
- Replication Project Report due Dec 11th
- Q2 project proposal due Dec 11th

DONE: TASKS THIS WEEK

Reading

- Read the original Grad-CAM paper “Grad-CAM: Why did you say that? Visual Explanations from Deep Networks via Gradient-based Localization”
 - <https://arxiv.org/pdf/1610.02391v1.pdf>

Participation

Answer the following questions (2-3 sentences each):

- What is the goal of the Grad-CAM algorithm?
- How does the Grad-CAM algorithm work?
- How does Grad-CAM differ from Class Activation Mapping (CAM)?

TO DO: TASKS FOR NEXT TUESDAY

Topic: Evolution of XAI Algorithms

Reading

- Read the blog on “A Visual History of Interpretation for Image Recognition” at <https://gradio.app/blog/interpretation-history>
- Try out the demo at <http://interpretation-blog.gradiohub.com/>

Participation

Based on the blog, reflect on the Grad-CAM algorithm. Write a few sentences on how the Grad-CAM algorithm improved over the previously existing algorithms, and what the newer algorithms are better at than Grad-CAM.

REPLICATION PROJECT

The goal of the final project is to apply the Grad-CAM algorithm to the COCO dataset.

Report

- Summary of replication result
- Shortcomings
- Possible improvements
- Conclusions

Code

- Develop functional Grad-CAM code which uses the COCO data set
- Develop code that generates an analysis and figures for results
- [Use this code as a basis](#)

Q2 PROJECT ELEVATOR PITCHES

- You are developing elevator pitches for your Q2 projects by next Tuesday.
- Next Wednesday in discussion: presentation of elevator pitches in class.

Q2 PROJECT PROPOSALS

- Proposals due next Friday (Dec 11)
- If you send me your draft I'll give you feedback
- Today and in office hour on Friday at 10am:
 - Discussion of project plans and ideas