

CSIE 5452, Fall 2021: Call for Proposal

Due November 29 (Monday) at Noon

1. Member(s) (at least 1, at most 4, each team just needs to submit one proposal to Gradescope but needs to select the member(s) within Gradescope):

Name	Student ID	Emails
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2. Type (example: pure survey has estimated percentages 100%, 0%, and 0%):

Type	Survey	Implementation	Research
Estimated Percentage	50	30	20

3. Title: Image Deraining for autonomous driving
4. Problem Description (1–3 sentences): Rain adversely impact image quality we get from camera, and cause them useless. Improve camera acquire image quality from rainy day can enhance lane line, object detection and others problem performance.
5. Reason to Select the Problem (1–3 sentences): Camera widely use in self-driving system, but in some environment camera captured image quality were hard to achieve object detection or other vision task. So we use image deraining way to improve image quality in rainy day.
6. Rough Schedule (1–3 items): About 3 week to survey related work and use 2 week try to implement their result and use rest time to research the improve way.
7. Expected Results (1–3 sentences): Implement deraining algorithm in streaming video. And compare raw image and deraining image result in object detection problem.
8. Optional Questions:

(Survey) What are the references that you want to survey? Deraining algorithm from vision related conference.

(Survey) How do you plan to survey the references (*e.g.*, detailed or quick)? Quick survey and use “Connected Papers” to quick review related work

(Implementation) Is there any existing public implementation? Yes, Most deraining algorithm were implemented for single image, it like a denoise problem.

(Implementation) How do you get the input data? Use Synthetic Rain Datasets.

(Implementation) What language do you want to use? Python.

(Research) What are the possible directions that you can get improvement over existing work? Use some frequency domain image information to enhance network information.