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Monocular depth estimations for UAV and high voltage power lines inspection

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High voltage power lines inspection requires high amount of effort and time and needs to be performed regularly. As high voltage power lines are critical infrastructure reducing the frequency of the inspections is not an option. To reduce effort required, some tasks can be automated. For example assessment of the state of transmission towers and power lines or autonomous UAV flights to gather necessary data for assessment. One of the core requirements for autonomous navigation is perception of the surroundings in the form of depth estimation. For UAV the most straightforward way is to use camera already mounted on the vehicle. Existing models for monocular depth estimation mostly focus on ground vehicles, such as cars, or generic UAV navigation. In this paper some models for monocular depth estimation were evaluated in the context of high voltage power lines inspection and navigation around such structures.

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