Real Time Detection, Prediction and Reconstitution of Rain Drops

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Abstract : The purpose of this paper is to propose a solution to detect, predict and reconstitute rain drops in real time – during the night – using an embedded material with an infrared camera. To prevent the system from needing too high hardware resources, simple models are considered in a powerful image treatment algorithm reducing considerably calculation time in OpenCV software. Using a smart model – drops will be matched thanks to a process running through two consecutive pictures for implementing a sophisticated tracking system. With this system drops computed trajectory gives information for predicting their future location. Thanks to this technique, treatment part can be reduced. The hardware system composed by a Raspberry Pi is optimized to host efficiently this code for real time execution.

Keywords : reconstitution, prediction, detection, rain drop, real time, raspberry, infrared

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