

Framework for Flower Gender Recognition Using Machine Learning

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This paper proposes a framework that can be used to identify the gender of imperfect flowers. One such application of gender identification of flowers is artificial pollination in large farmlands. The study reviews the literature on flower detection, flower recognition and its applications as well. Automatic gender identification of a flower is a branch of flower recognition that the researchers have not considered yet. The challenge in any automatic flower gender identification method is that the accuracy should be nearly 100 percent, as the maximum error rate of pollination attempts is twice that of identification. Our framework is based on building mathematical models of the structure of floral organs of imperfect flowers. It uses low-resolution images captured through cameras on aerial or mobile robots. Finally, it proposes to apply image processing and machine learning models together with image classification techniques to identify the gender of a given imperfect flower.

Keywords: *Automatic Flower Gender Recognition, Automatic Pollination, Flower Recognition, Image Classification, Image Processing*

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