

Parallel Guided Image Processing Model for *Ficus Deltoidea* (Jack) Moraceae Varietal Recognition



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Abstract Nowadays, with the huge number of leaves data, plant species recognition process becomes computationally expensive. Many computer scientists have suggested that the usage of parallel and distributed computing should be strongly considered as mandatory for handling computationally intensive programs. The availability of high performance multi-cores architecture results the complex recognition system to become popular in parallel computing area. This paper emphasizes on the computational flow design to enable the execution of the complex image processing tasks for *Ficus deltoidea* varietal recognition to be processed on parallel computing environment. Multi-cores computer is used whereas one of them acts as a master processor of the process and the other remaining processors act as worker processors. The master processor responsible for controlling the main system operations such as data partitioning, data allocation, and data merging which results from worker processors. Experiments showed that a multi-cores parallel environment is a very appropriate platform for pipeline image processing. From the results, the sequential complex image processing model and computational flow design are significantly improved when executed through parallel model under multi-cores computer system. As the number of cores increases, the computational time taken by the parallel algorithm becomes less.

Keywords *Ficus deltoidea* jack • Plant species recognition • Image processing SPMD architecture • Parallel computing

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