



Multiprocessor Implementation of a Face Detection System

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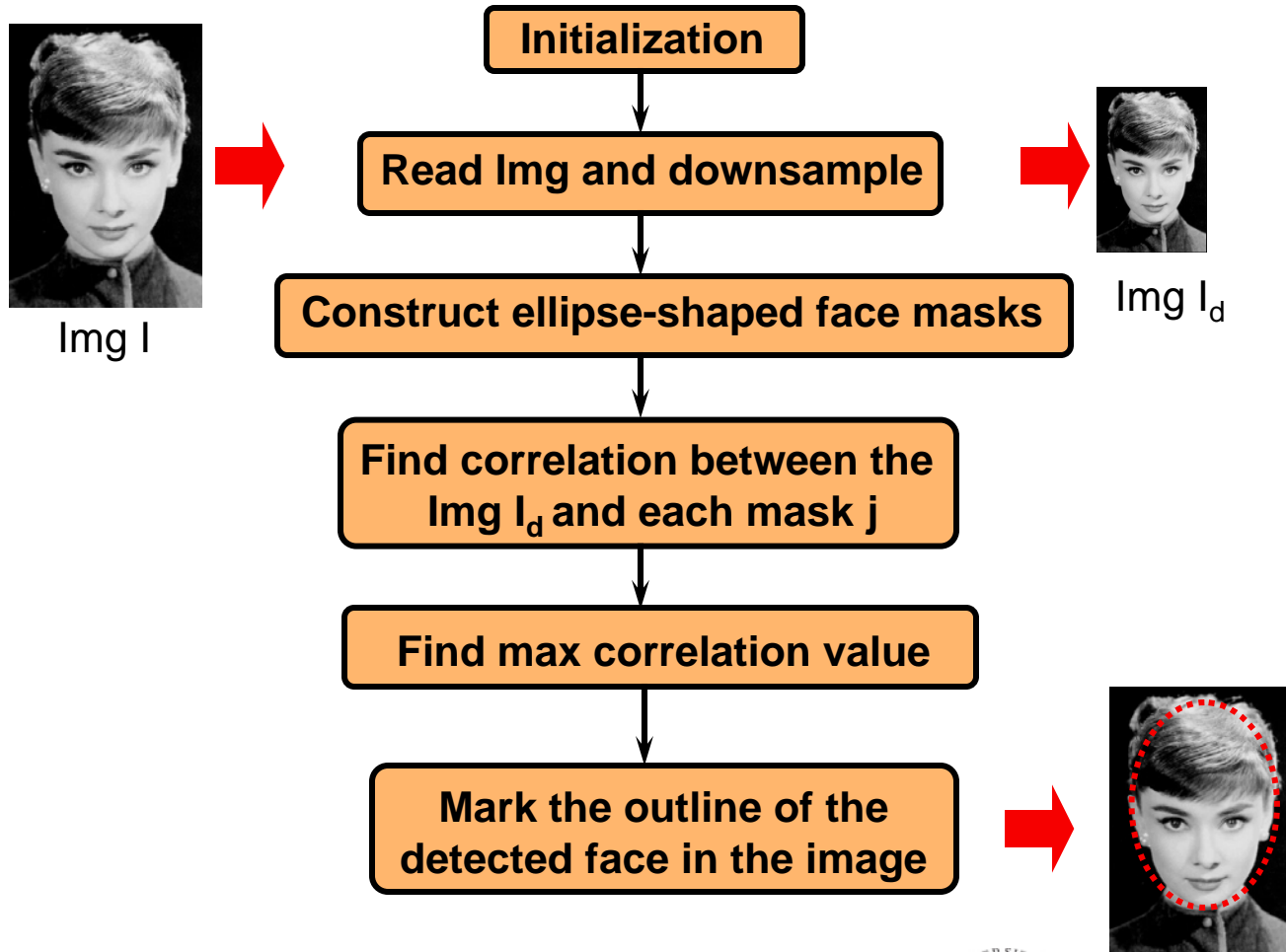
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Overview

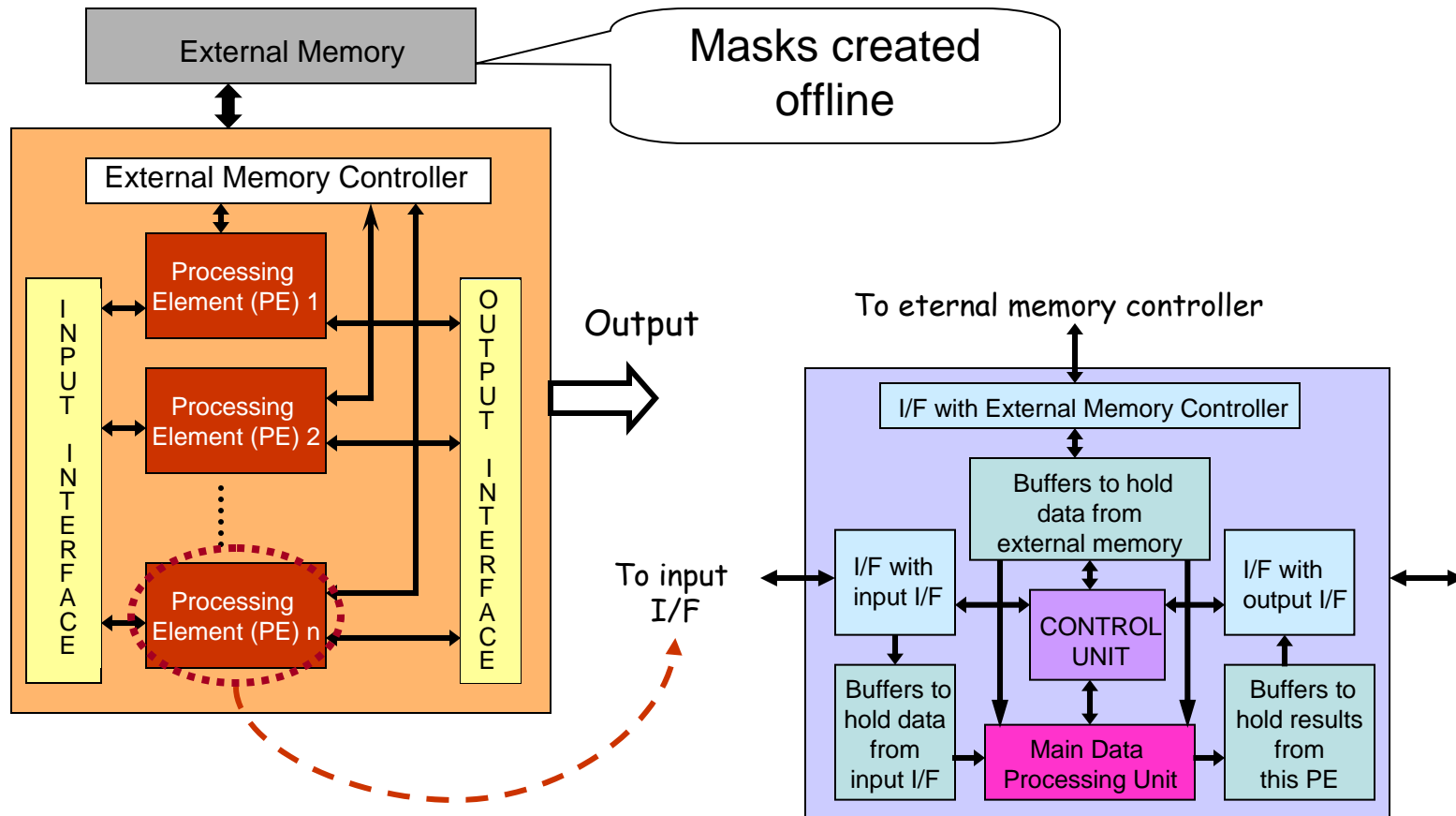
- Face detection and recognition
 - Important application for smart cameras,
 - Typically characterized by computational and memory intensive operations
 - Require significant performance for real- time realization
 - Multiprocessor implementation is an effective approach for power/performance gains for such systems



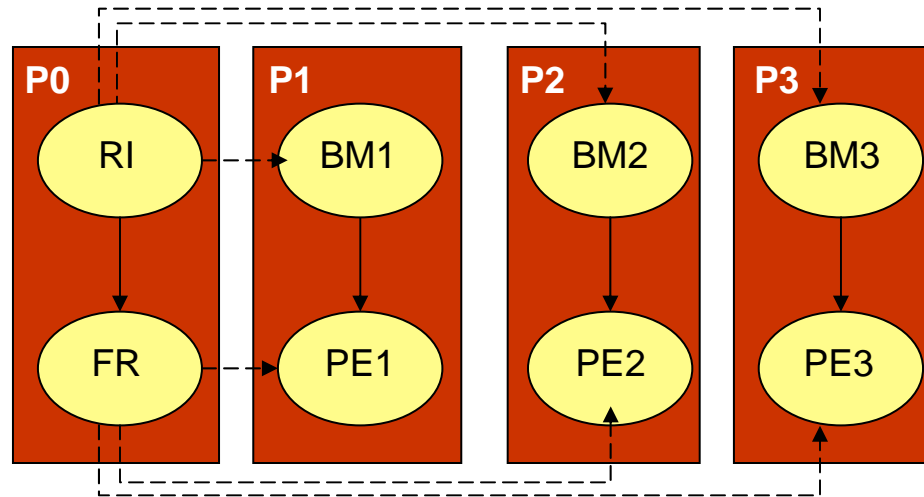
Face Detection Algorithm



Architecture for Hardware Implementation



Architecture for Software Implementation



4 processor implementation

RI: Reads Image I and downsamples it

BM_{*i*}: Creates the mask set for PE_{*i*}

PE_{*i*}: Computes correlation for mask set BM_{*i*} and image I and finds the local best match

FR: Finalize results by finding the best match amongst all the local matches and marking the outline

P_{*i*}: Processor id