Final Year Project Proposal
ARM Cortex-M based SoC design for Video Processing

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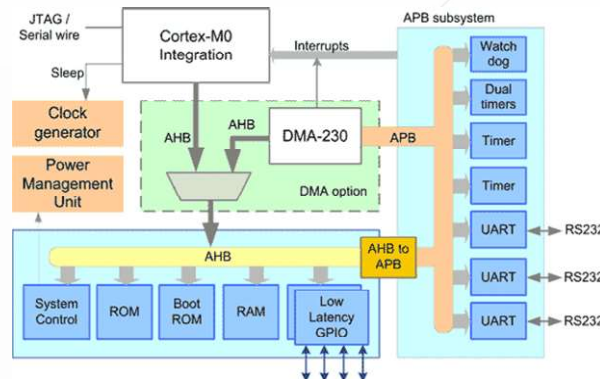**Academic Supervisor from**
University of Cambridge

Proposal

- **An opportunity for the final year student to work on the project under supervision from both ARM engineer and Cambridge University professor**

- The ARM University Program enables educational use of ARM technology through university courses, labs and student projects

- Synthesizable ARM Cortex-M0 and Cortex-M3 CPU cores are freely available to educators, students and researchers

- The proposal is to build a framework for SoC design around ARM core, with an interface for video processing HW accelerator

- This is an opportunity to expand your skills in digital design and learn more about industry standards for HW / SW implementation

- **The scope of the project to be discussed based on your skills and experience; system design and architectural guidance will be provided at any stage if necessary**

- Final implementation shall be demonstrated on the FPGA development board

Architecture

- The Cortex-M System Design Kit provides example AMBA systems to bring the designer to a point of a working system as quickly as possible, offering a library of fundamental peripherals and interconnect generation along with software drivers and examples

- The system shall be accompanied with an accelerator capable of processing real-time video streams from attached camera module; output signals to be displayed on a monitor display

Delivery

- **The project to be completed within a year**

- BA / Masters Dissertation covering implementation details and academic challenges

- Joint conference paper and poster

- Demo platform based on FPGA development board

- Python-based system builder supporting RTL simulator and FPGA synthesis tools

- Design RTL for the system wrapper and the video processing accelerator

- **If you are keen on digital design and have some scripting background this could be an exciting opportunity**

- Necessary hardware will be provided by ARM

- To apply or enquire for further details, email: **robert.walczyk@arm.com**

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