Embedded Systems 2022/2023: WIP projects' list (21/09/2023)

- GPP/ASP
  - Analysis and experimental evaluation of ASIP design flows
    - https://www.synopsys.com/dw/ipdir.php?ds=asip-designer
    - https://codasip.com/products/codasip-studio/
    - http://ip.cadence.com/ipportfolio/tensilica-ip
    - https://www.andestech.com/en/homepage/
    - http://www.archc.org/
    - http://openasip.org/
    - …
- SoC
  - Analysis and design of a communication schema between FPGA (Intel Cyclone V 5CEBA7F31C8) and a PC
- GCD use case
  - Development of GCD for both a soft-GPP and a SPP on the same FPGA
- Digital Camera use case
  - Development of a parallel Digital Camera
    - Multi-GPP/SPP for DCT
- Advanced Operating Systems
  - FREERTOS
    - Analysis and experimental evaluation of FreeRTOS on ATmega328P
      - e.g., Digital Camera, Pacemaker
  - MIOSIX
    - http://miosix.org/
- SystemC
  - Analysis and experimental evaluation of SystemC-TLM (Transaction Level Modeling)
- Design Methodologies
  - Analysis and experimental evaluation of ESL methodologies
    - ESP
      - Research platform for heterogeneous system-on-chip design that combines a scalable tile-based architecture and a flexible system-level design methodology
        - https://esp.cs.columbia.edu/
    - Others
      - SystemCoDesigner, CoFluent, Daedalus/Sesame, SpaceStudio, Metropolis, ForSyDE, Poseidon Design, SCE (System-on-Chip Environment), Koski, PeaCE/HoPES, MAPS, …
  - Experimental evaluation and improvement of HEPSYCODE
    - Use cases modeling
    - MDE Eclipse-based GUI and code-generation
    - …
  - Analysis and experimental evaluation of CPS methodologies
    - MODELICA, Ptolemy/Ptolemy2, …
- Opportunities with Thales Alenia Space Italy (AQ)
  - See http://www.pomante.net/sito_gg/EmbeddedSystems2223/TASI_AQ_2023.pdf

Please, check also here for other opportunities (some are still available):

http://www.pomante.net/sito_gg/Thesis2021.htm