Md Rubel Ahmed

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SUMMARY

- Exclusive exposure on the specification mining for SoC validation.
- Solid background in FPGA Design.
- Expertise in MIPS32.
- Experienced in teaching and conducting Computer Architecture courses.
- Enthusiastic about RISC-V processors and riscv-gnu-toolchains.

EDUCATION

Doctor of Philosophy in Computer Science and Engineering *Exp. Dec. 2023*
University of South Florida, Tampa, FL CGPA: 3.80/4
Bachelor of Science in Computer Science and Engineering *March 2017*
Khulna University of Engineering and Technology, Bangladesh CGPA: 3.23/4

TECHNICAL STRENGTHS

Programming Languages	C/C++, VHDL, Python, Java, JavaScript
EDA Tools	Xilinx ISE Webpack, Vivado HLx
Architectural Simulator	Simplescalar and Mars
Miscellaneous	Automation Scripting, Spin, Chisel 3, Rocket chip generator, Uppaal, git, vim

EXPERIENCE

Research Assistant *August 2019 - present*
The SEES Lab, U. of South Florida, Tampa, FL
- Worked on trace generation and preprocessing from a VHDL SoC model using Xilinx Vivado
- Worked on developing algorithm for automatic specification generation using data mining techniques

Graduate Teaching Assistant *August 2018 - July 2019*
University of South Florida, Tampa, FL
- Instructor: Computer Architecture(undergrad)
- Teaching Assistant: Computer Architecture, FPGA Design, Web Systems for IT.

Software Engineer *Nov 2017 - July 2018*
Synchronous ICT, Dhaka, Bangladesh
- Worked on multimedia processing using FFMPEG.
- Developed data driven cross platform mobile app using React Native.

ACADEMIC PROJECTS

- **>128 bit prime factorizer :** Designed FPGA implementation of prime factorizer for larger numbers >128 bit using VHDL and implemented on Zedboard.
- **Single Cycle Processor:** Designed a single cycle processor consisting of ALU, and multibank main memory in logisim.
- **Memory system performance analysis:** Analyzed memory system performance using M5 simulator and 4 SPEC-CPU2000 benchmarks.
- **Addition and Multiplication matrix operations:** Designed an FSM controller to implement the multiplication and addition logic using Vivado and prototyped on Zed board.

PUBLICATIONS/POSTERS

- Amit Sutradhar, Md. Samiul Haque Sunny, Manash Mandal, **Rubel Ahmed**, "Design and construction of an automatic electric wheelchair: An economic approach for Bangladesh, 2017 3rd International Conference on Electrical Information and Communication Technology (EICT)
- Md Rubel Ahmed, Yuting Cao, Hao Zheng, "Specification Mining For SoC Validation Using Data Mining Techniques", 56^{th} Design and Automation Conference (DAC), Jun 2019.(Poster)
- Md Rubel Ahmed, Yuting Cao, Hao Zheng, "Specification Mining From Message Flow For SoC Validation", 2019 FICS Research Conference on Cybersecurity, Mar 2019.(Poster)

AWARDS/ACTIVITIES

- A.Richard Newton Young Student Fellowship award 2019 from Design Automation Conference
- Contest programming, Robotics competition, Registered volunteer for Meal on Wheels of Tampa