Berke Halavurt

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Profile

Junior Computer Science student at Bilkent University with a strong interest in Embedded Systems, SoC Design, and Computer Architecture. Strong academic foundation in C++, MIPS Assembly, and Verilog/SystemVerilog. Seeking internship opportunities to apply skills in hardware design and low-level programming.

Education

Bilkent University Ankara, Turkey
Bachelor of Science in Computer Science *Sep. 2023 – June 2027*

- **Relevant Coursework:** Digital Design, Computer Organization (A-)

Experience

Laboratory Tutor Ankara, Turkey
Bilkent University *Feb. 2026 – Present*

- Mentoring 37 2nd-year CS students in Computer Organization and Architecture principles.
- Guiding students through MIPS assembly programming and hardware implementation on Basys 3 FPGAs.
- Assisting with debugging single-cycle and pipelined processor designs, I/O operations, and cache memory logic.

Technical Skills

Languages: C, C++, Java, SystemVerilog, Verilog, VHDL, MIPS Assembly, RISC-V, Python
Tools: Xilinx Vivado, Basys 3 FPGA, MATLAB, Git, Linux

Projects

Single-cycle RISC-V Processor as a Personal Project | *SystemVerilog, Vivado, Basys 3*

- Designed and implemented a fully synthesizable 32-bit single-cycle RISC-V (RV32I) processor core from scratch.
- Developed the complete datapath and control logic, including a custom ALU, Register File, and memory modules.
- Deployed onto a Basys 3 FPGA, ensuring accurate single-clock-cycle execution for arithmetic and branching instructions.

Pipelined MIPS Processor | *SystemVerilog, Vivado, Basys 3*

- Designed a 5-stage pipelined processor supporting full arithmetic and logical instruction sets.
- Implemented Hazard Detection and Forwarding Units to resolve data dependencies.
- Synthesized and verified the design on a Basys 3 FPGA, validating hardware timing constraints.

Achievements

YKS - University Entrance Exam (2023): Ranked 2790th among ∼3.5 million students in Turkey.
Intersteno World Internet Keyboard Championship (2017): 4th Place Globally in the 0-12 age group.

Languages

Turkish: Native
English: Professional Working Proficiency