CENG311 - Computer Architecture

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Video Assignment 1

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1. The video mentions several levels of transformation hierarchy of computing systems.

   - Algorithms: Step by step methods to designed to solve specific problems.
   - Programming Languages: Translate algorithms to solve the problems.
   - System Software: VM, OS, MM. Elements which support the programs execution.
   - Instruction Set Architecture(ISA): The interface that connects software with hardware.
   - Micro architecture: Hardware design that implementing the ISA.
   - Digital Logic Circuits: Circuits and gates that form the building blocks of micro architectures.
   - Devices: Physical elements operating electrons.

   This course focuses on the sections between **micro architecture and ISA.**

2. The video mentioned some of the motivations for studying computer architecture.

   - Develop systems that are faster, more efficient and more reliable.
   - Better solutions to problems like power/energy/thermal constraints.
   - Learning how code runs on hardware level.
   - Tackle with real-world challenges like AI.

3. Since he explained DRAMs in a bit more detail towards the end of the video, there were parts I couldn't fully understand. If I were in class, I would ask Professor Onur Mutlu to explain them again. Additionally, I would like to ask about the impact of AI on architectural designs and whether AI could work integrated with computer chips in the future.