Computer System Design Depth in ECE
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Qualcomm Snapdragon 845 Mobile Processor

ECE 16: Rapid HW/SW Design (Embedded Software)

ECE 25: Intro Digital Design (Logic Design)

ECE 111: Adv. Digital Design (Verilog RTL Design)

ECE 165: Digital IC Design (CMOS/IC Design)

ECE 141AB: Software Foundations (Application Software)

ECE 140AB: Art of Product Engineering (Application Software)

ECE 30: Intro Computer Engr (Comp. Architecture)
Relationship to Other EE Depths in ECE

- If you pick CSD, you should take courses in one or more application domains.
- If you pick another depth, you should take some HW/SW design courses in CSD.

Deeper Understanding of Application Domains

- **Communications Systems (CTS)**: How to make processors and systems and (embedded) software that runs on them.
- **Signal & Image Processing (SIP)**: How to make circuits from transistors and other devices.
- **Electronics Circuits & Systems (ECS)**: How to create transistors and other devices from silicon.
- **Photonics (PHO)**: Understanding optical sensors, lasers, lenses...
- **Electronics Devices & Materials (EDM)**: How to make circuits from transistors and other devices.
- **Machine Learning & Controls (MLC)**: How to make processors and systems and (embedded) software that runs on them.

Diagram:

- HEVC: Same quality of video data, the H.265 can save 70–80% bandwidth sources.
- Neural network diagram with input layer, hidden layer, and output layer.