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ECE 410/510: Hardware for AI and ML

Week 2: Recap and reminders

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What did you learn last week?

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What does industry tell you?

Two common answers:

1. We can't tell you anything.
2. There are no good/mature tools and approaches. Improvise and use whatever works for you.

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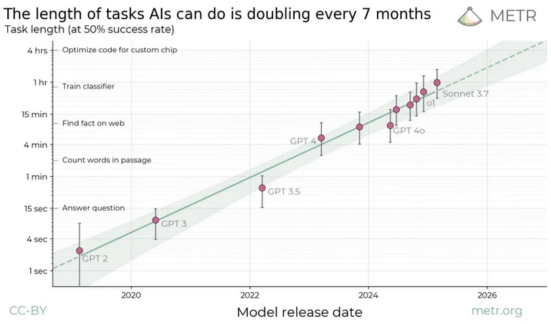

https://arxiv.org/abs/2503.14499

Currently in the works…

- Reading list
- Selected solutions to challenges.
- Feedback on documentation.

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REMINDER: Portfolio links

1. Submit your Github URL.
2. Any other platform you will use to build your "portfolio" of accomplishments in this class.
3. Submit it on Canvas

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How can I earn an A in this class?

Questions to ask yourself:

- How can I impress my future employer?
- Would I be proud to show my portfolio to a hiring manager or future employer? If not, why not? What could I improve?
- What "wow" factor, if any, does my portfolio have?
- Would my portfolio be useful for a future student? Could a student learn from what I did?

Dos

- Someone should be able to reproduce your steps.
- Include all the LLM queries.
- Include visualizations whenever possible.
- Explain what worked and what didn't work. Provide evidence for what worked.
- Explain how things work. E.g., tutorial style. **Writing is thinking!**
- Acknowledge the use of LLMs.

What should I do with my challenges?

- They should be in the portfolio.
- Include the assignments.
- Post your answers on slack
  - #codefests
  - #weekly-challenges
- Ask me for feedback.

Codefest #2 preparation

- Think about what AI/ML algorithm/workload you want to pick.
- It should be a non-conventional workload that will benefit from specialized hardware.
- Use Google Scholar to find relevant literature on current state-of-the-art
- You will be designing your own accelerator chiplet for that workload.