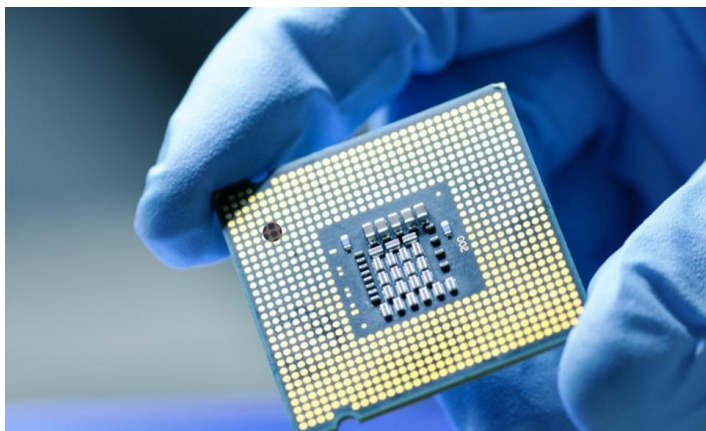


Debugging Semiconductors is a Billion Dollar skill. *How should we teach it?*

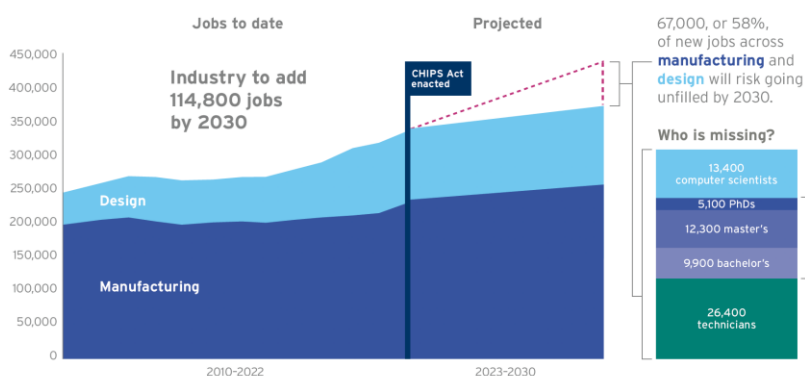
#2321255: An Investigator Development Plan to Improve Undergrad Debugging Skills & Mindset

Semiconductors



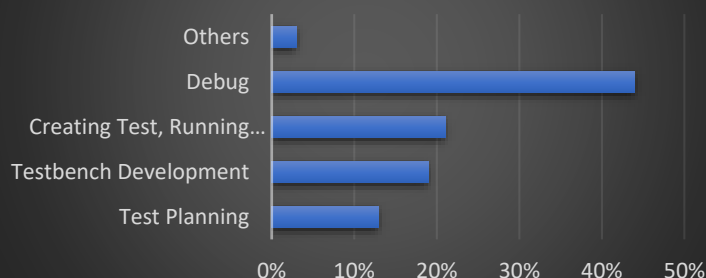
Semiconductors will be **\$1 Trillion Industry** with **67,000** unfilled jobs.

FIG. 1: Historical semiconductor workforce and projected 2023-2030 gap



Debugging

How a Verification Engineer Spent Their Time



Debugging: the **Schedule Killer**
A skill that is rarely taught.



Emotions associated with debug circuits:
anxiety
frustration

Image credits: [Semiconductor Industry Associations \(SIA\)](https://www.semiconductors.org/)

Methods

Quantitative

Design-based

- Collect performance data from juniors.
- Analyze pre/post with quantitative method.
- Develop curriculum with an industry advisor board.
- **Customized instruments** with **content validation**.

Challenge Overcome

instruments

There is no existing instrument that can measure debugging skills or mindset. Debug education may also cultivate **persistence** and help student manage their anxiety, frustration, and emotions.



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← Preprint: bit.ly/debug-edu

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