Are consumer GPUs a problem for export controls?

Intermediate · A few weeks · Free · Project idea

Online version: https://ai-safety-sandbox.vercel.app/projects/consumer-gpus-and-export-controls/

Summary

Export controls target data-centre chips. But consumer hardware keeps getting better, and frontier-level performance reaches it within about a year. Update the analysis with the latest hardware.

Why it matters

If gaming hardware can get around the controls, policymakers need to know by how much.

What you will have at the end

An updated quantitative analysis.

How to start (tick each box as you go)

- [ ] **1. Read IAPS's report and Epoch AI's consumer-GPU gap analysis.**
- [ ] **2. Collect specs for current consumer and data-centre chips from public sources.**
- [ ] **3. Estimate what a cluster of consumer chips could train, and at what cost.**
- [ ] **4. Compare with current export-control thresholds.**
- [ ] **5. Write up your conclusion and its biggest uncertainty.**

Key terms

Export controls
Government rules restricting which countries or companies can buy certain technologies, such as advanced AI chips.

Compute
The raw computing power (specialised chips running for a long time) used to train and run AI models. Easier to measure and track than data or ideas.

Source and links

Technical AI Governance resource pack (MIRI TGT reading lists)
https://www.lesswrong.com/posts/GRPswd5v7haob97fA/recommendations-for-people-getting-into-technical-ai

IAPS — Are consumer GPUs a problem for US export controls?
https://www.iaps.ai/research/are-consumer-gpus-a-problem-for-us-export-controls

Epoch — frontier performance reaches consumer hardware within a year

https://epoch.ai/data-insights/consumer-gpu-model-gap

Epoch — machine learning hardware data
https://epoch.ai/data/machine-learning-hardware

When you have finished

Write a few paragraphs on what you did, what you found and what you would try next, and share it with a friend, your society or online.

Courses, mentors, small grants and communities:
https://ai-safety-sandbox.vercel.app/next-steps/

Questions? Ask in AI Safety Cardiff University (AISCU): https://aiscu.org/

Notes