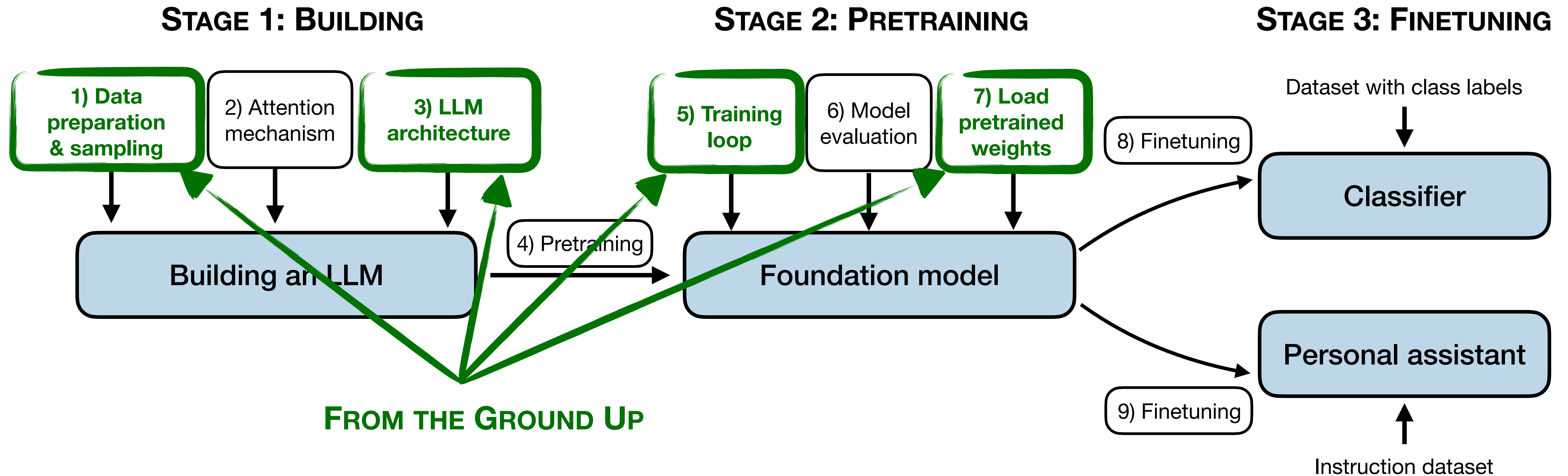


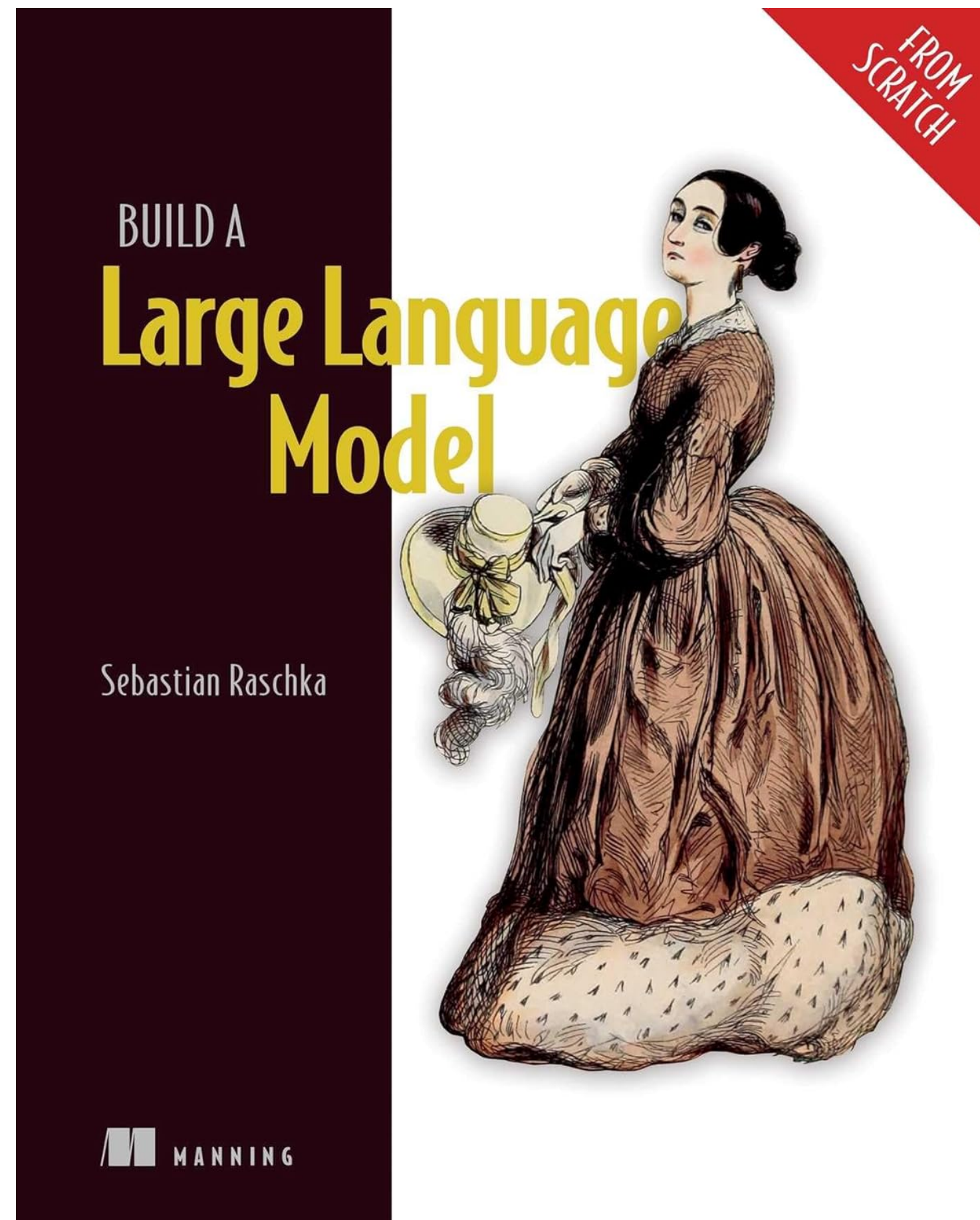
A nighttime photograph of the Seattle skyline. The Space Needle is the central focus, illuminated against the dark sky. Other skyscrapers are visible, some with lights on. In the background, Mount Rainier is visible under a dark, cloudy sky. The foreground shows some lower buildings and trees, also partially illuminated.

Pretraining and Finetuning LLMs from the Ground Up

	Workshop topics
1	Introduction to LLMs
2	Understanding LLM input data
3	Coding an LLM architecture
4	Pretraining LLMs
5	Loading pretrained weights
6	Finetuning LLMs

Developing an LLM



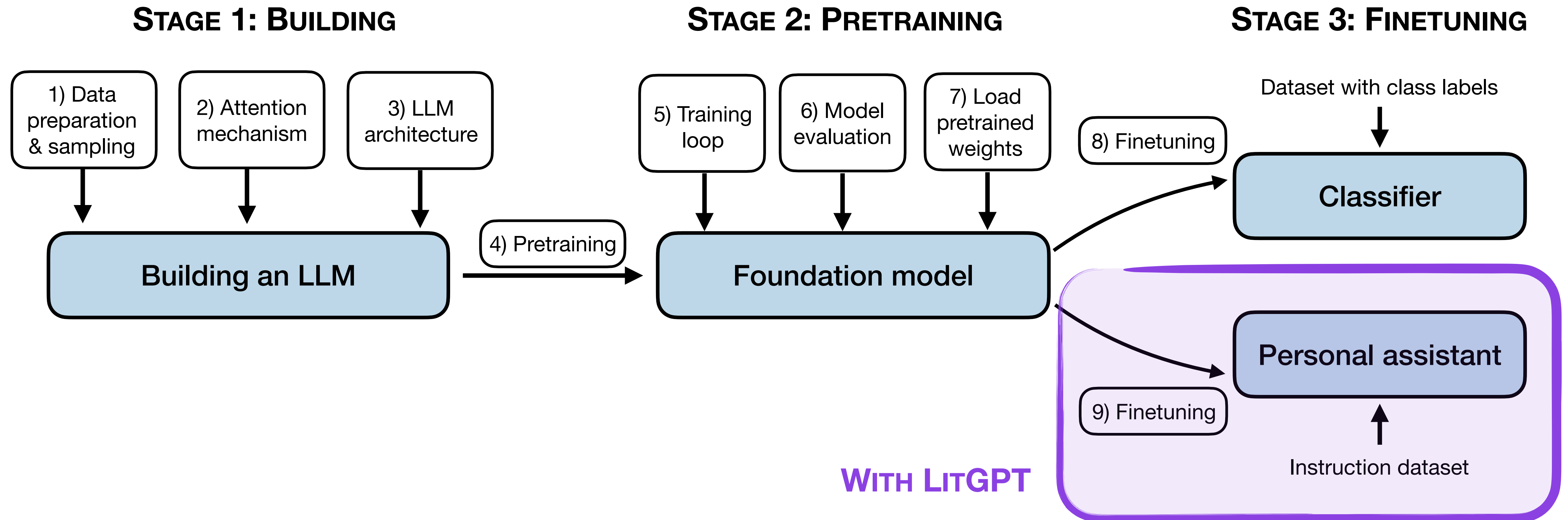


<https://mng.bz/lrp2>

<https://github.com/rasbt/LLMs-from-scratch>

(Source for most figures and code)

Developing an LLM



⚡ LitGPT

20+ high-performance LLM implementations with recipes to pretrain, finetune, deploy at scale.

- ✓ From scratch implementations
- ✓ Flash attention
- ✓ Reduce GPU memory (fp4/8/16/32)
- ✓ No abstractions
- ✓ FSDP
- ✓ 1–1000+ GPUs/TPUs
- ✓ Beginner friendly
- ✓ LoRA, QLoRA, Adapter
- ✓ 20+ LLMs

python 3.8 | 3.9 | 3.10 | 3.11 CPU tests passing License Apache 2.0 chat 988 online

[Lightning AI](#) • [Quick start](#) • [Models](#) • [Finetune](#) • [Deploy](#) • [All workflows](#) • [Features](#) • [Recipes \(YAML\)](#) • [Tutorials](#)

⚡ Get started

<https://github.com/Lightning-AI/litgpt>

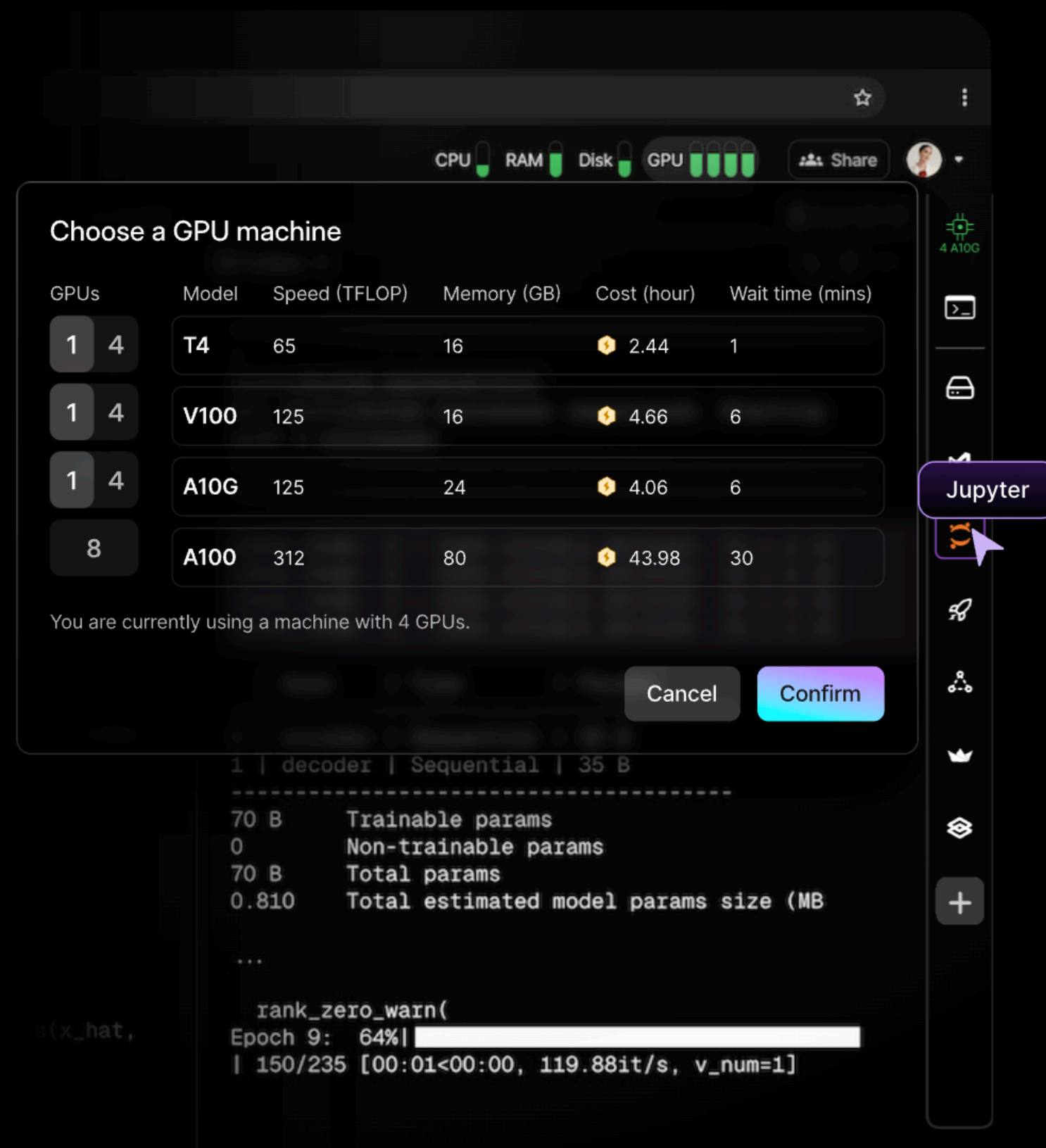


Creators of PyTorch Lightning

Simple. Powerful.

Zero setup. Persistent. Always ready.

Studio marries the simplicity of a **local development experience** with the power of **1,000s of cloud GPUs**, unlimited storage and multiplayer collaboration.



- ⚡ No environment setup.
- ↔ Code in the browser or connect your local IDE.
- ⚙️ **Switch from CPU to GPU with zero environment changes.**
- 🌐 Host and share AI apps. Streamlit. Gradio. React JS.
- 👥 Code together.
- 📁 Infinite storage. Upload, share files and connect S3 buckets.

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