How far can FOSS take you?

ORConf 2025

Advocated for silicon startups to use & contribute to open source tools

Two years ago I helped put an open methodology at the heart of a startup's engineering process

The startup failed

The startup failed, so was I wrong?

Weighing it Up

Reveals our secrets

Gives others a leg up

Wastes time

Makes it easier to leave

Weighing it Up

Reveals our secrets but many problems aren't unique

Gives others a leg up so others can help you

Wastes time but docs and unit tests help you too

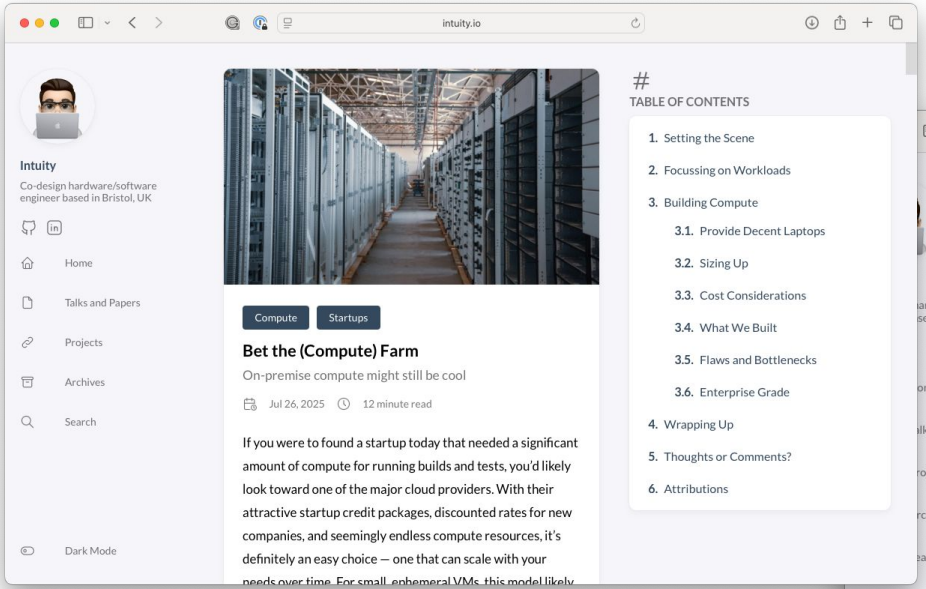
Makes it easier to leave or motivates you to stay

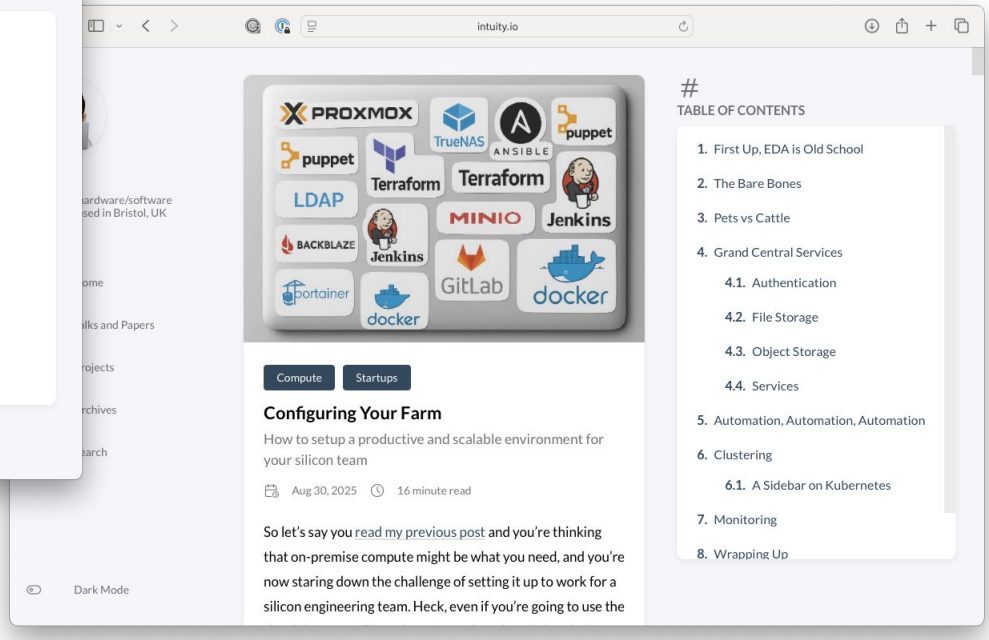
So what did I learn?

1. Infrastructure and Compute

- Complex projects require careful setup
- Understanding that infrastructure is equally flow and compute
- Spend wisely, cloud costs ramp up *fast*
- Use infrastructure-as-code (Ansible/Puppet/Terraform)
- The best computer is the one you have with you

1. Infrastructure and Compute





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2. Keep Tools Focussed

Photo by Denise Jans on Unsplash

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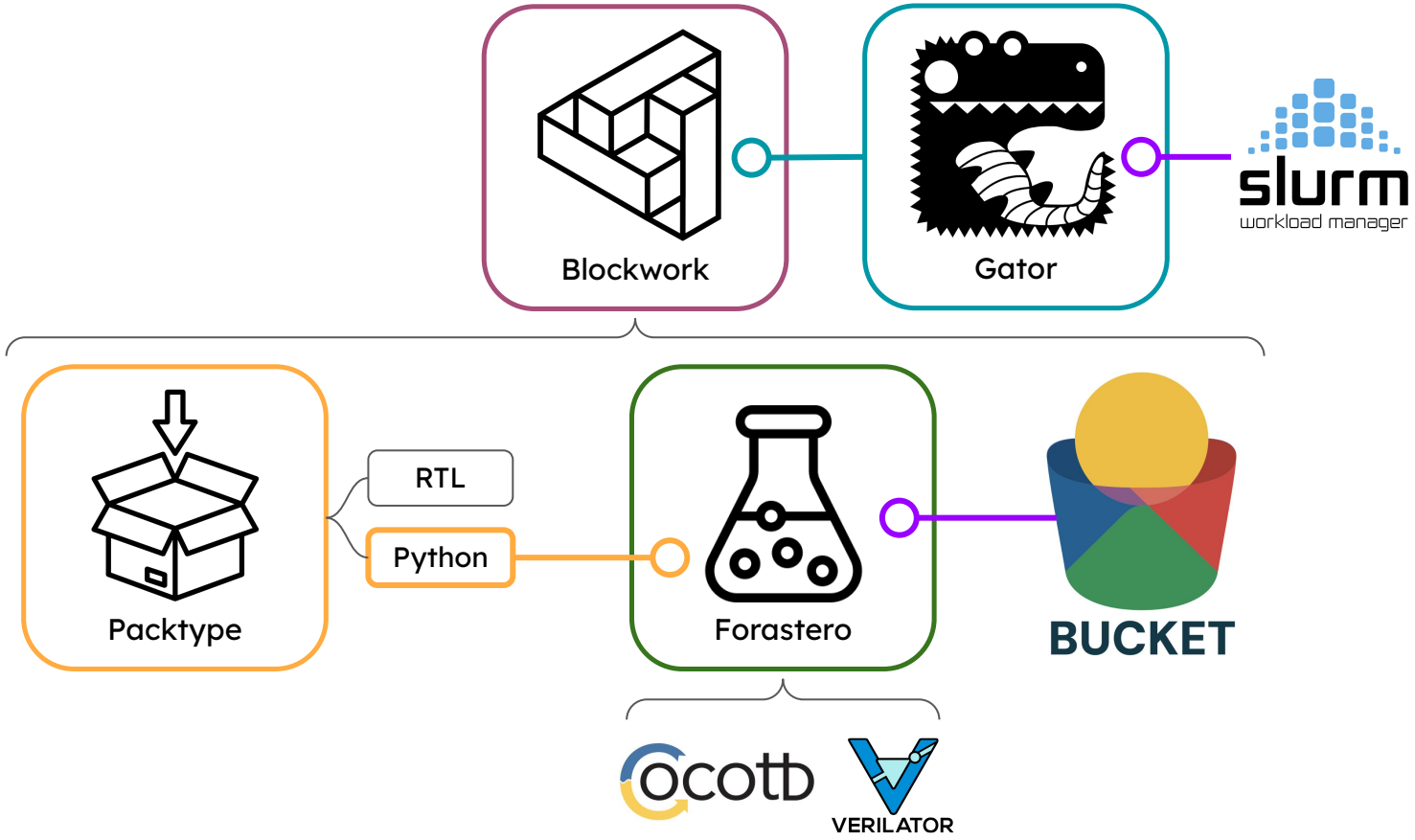
Blockwork
Gator
slurm
workload manager
Packtype
RTL
Python
Forastero
BUCKET
ocotb
VERILATOR

3. The Flow is Incomplete

- Icarus, Verilator, cocotb, GTKWave, Surfer, Yosys, Sby, … are amazing
- What to use for CDC, RDC, DFT (BIST), …?
- Make your flows modular using Edalize, Bazel, …
- Fix rough edges and share them

Wrapping Up

- Open tools and methodologies will get you *a long way*
- What now? FRACTILE
- Building AI inference accelerators using open tools and flows
  - *apytypes, bazel, bucket, cocotb, constrainedrandom, gator, gtkwave, icarus, packtype, slang, surfer, verilator, yosys*

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