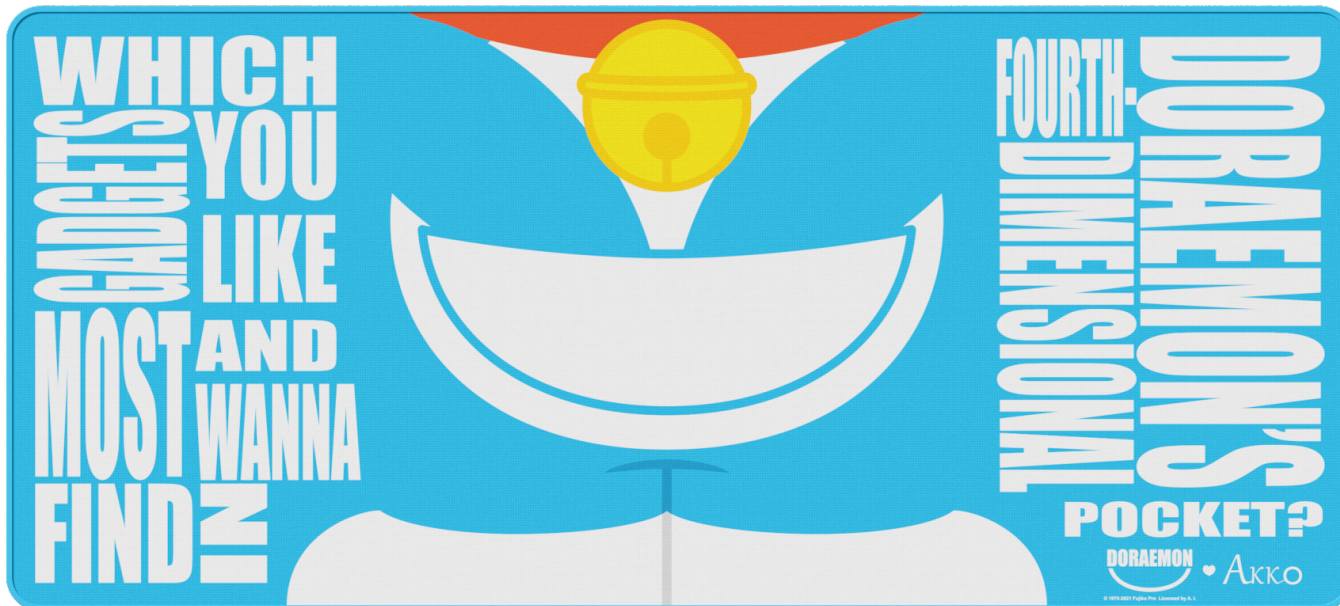


Doraemon T1-Software

Patrick “Ka Vang” TSANG (SLAC)

Doraemon Collaboration Meeting
Sep 28, 2026

Provide *reproducible* and *user friendly* software for Doraemon T1 data challenge.



Goal: At the time of data release, users can run the exact same data production scripts + baseline solutions.

Github Repo

SLAC



Platform ▾ Solutions ▾ Resources ▾ Open Source ▾ Enterprise ▾ Pricing

nu-doraemon / t1-software Public

<> Code Issues Pull requests Actions Projects Security and quality Insights

main ▾

1 Branch 0 Tags

Go to file

<> Code ▾

	kvtsang feat: single conda python3.11 for Torch/JAX/PyROOT, runtime env by de...	624b45d · 3 days ago	9 Commits
base	feat: single conda python3.11 for Torch/JAX/PyROOT, runti...	3 days ago	
scripts	feat: shared ROOT/GEANT4 base layer + DLPGenerator/ed...	3 weeks ago	
subgroups/lartpc	feat: single conda python3.11 for Torch/JAX/PyROOT, runti...	3 days ago	
.gitignore	fix: build scratch stays on \$LSCRATCH, images go to outp...	3 weeks ago	
README.md	feat: single conda python3.11 for Torch/JAX/PyROOT, runti...	3 days ago	

Container

- user focus running software, **not** building
- support docker / apptainer (most HPCs support)

Base Image

- sharable tools: GEANT4 / ROOT / PyTorch / JAX

Subgroup Overlay

- T1-LArTPC: event generators / energy deposition simulation (GEANT4) / detector simulation / label generation

Example: T1-LArTPC

1 List of software packages

<https://github.com/DeepLearnPhysics/DLPGenerator> (particle bomb)
<https://github.com/drinkingkazu/edep-sim.git> (GEANT4)
<https://github.com/DeepLearnPhysics/JAXTPC.git> (charge readout)
<https://github.com/CIDeR-ML/goop.git> (optical readout)

2 Hashes / Tags

`DLPGENERATOR_COMMIT=cc0654a3e2dc07e9a83056cdf5afe749d9402d3a`
`EDEPSIM_COMMIT=b982cef9848da9376bb7f4573f321e9ac625a3a7`
`JAXTPC_COMMIT=806f9b3cced279314a3028b9bb4afba4104eca71`
`PIMM_DATA_COMMIT=168bf0205ba661952ce7e29b67fce76234df8a90`
`GOOP_COMMIT=cea65a18b25a21495d828b4c6ee80024538648c4`

3 Unit tests for individual package AND full pipeline test scripts

4 Extras

- production scripts
- event display

5

Image with software installed

- currently manual build on s3df (apptainer)
- CI/CD work-in-progress
- similar containers for baseline solutions

T1-Software Status

T1-LArTPC / T1-WC: asymptotically close to pre-production
Others: not started.

Thursday working session:

- ≥ 2 volunteers, preferably less experienced
- instructions will be given
- test the LArTPC and WC images for production
- provide feedback as “users”

For the future:

- T1 subgroup leaders: please reach out for the software requirements
- may extend the effort beyond T1, e.g. T2 / AI school