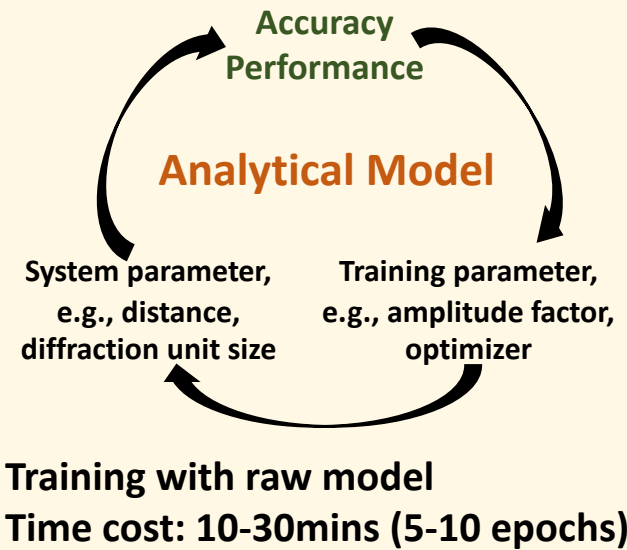
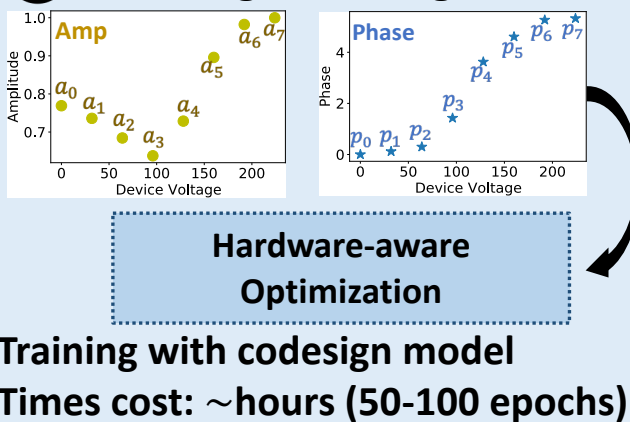


1 Design Space Exploration

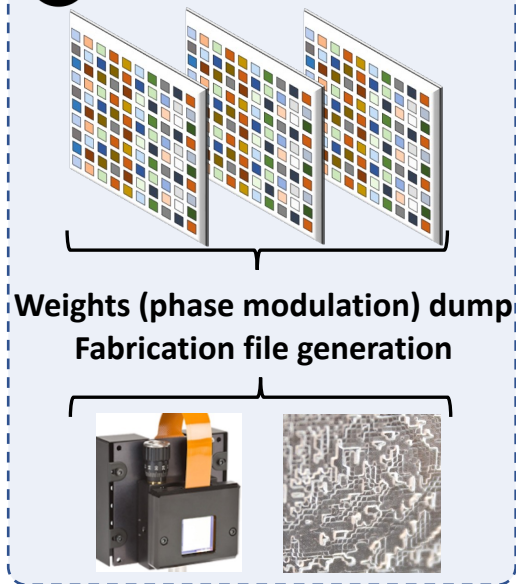


Hardware Information
e.g., SLMs, 3D printers, 3D additive fabrication

2 Co-design Training

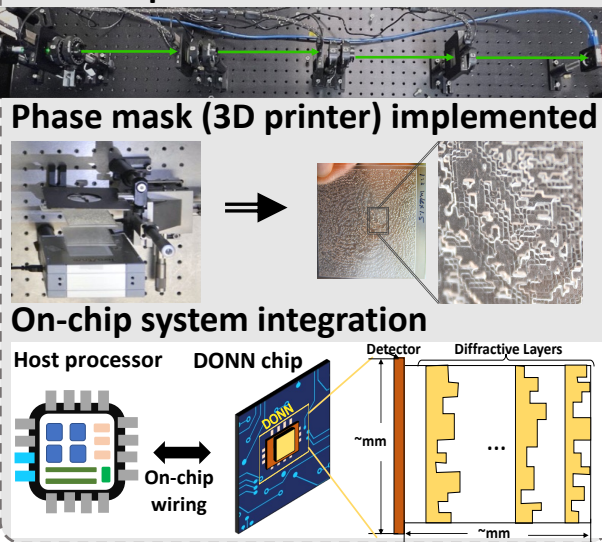


3 Model Fabrication



4 Physical Deployment

SLMs implemented



User-defined Design
Specification, ML Task

Selected Parameters

Trained Model

Fabrication Specs

Optical Deployment

5 DSL Example

```
import LightRidge as lr
model=lr.DSE(...,parameters,...,
lr.layers.diffractionlayer_raw(...))
.to(device)
```

```
# update the model with co-design
model=update(model,parameters,
...,lr.layers.diffractionlayer(...))
.to(device)
```

```
# weights dump & quantization
lr.layers.weight_dump()
# HW fabrication file generation
lr.model.to_system()
```

● LightRidge Automation

● Hardware Realization