

Jiayi Thesis Roadmap

Neural Architecture Search (NAS) Study

Phase 1

Categorizing NAS methods based on:

- Method: Genetic Algorithm (GA), Recurrent Neural Network (RNN), etc.
- Search space (size, type, blocks, etc.)
- Search objectives (accuracy, FLOPs, latency, energy efficiency, etc.)
- Resources (search time, GPUs, etc.)
- Results

Deep Neural Network (DNN) Accelerators

Phase 2

Studying different DNN accelerators to learn about:

- Their base of improvement (sparsity, data reuse, parallelisation, etc.)
- Is it possible to find suitable architectures for them using NAS methods

Implementation

Phase 3

- Choosing a NAS framework
- Choosing NAS objectives, search space, parameters, etc.
- Implementing (modifying) the framework based on the requirements
- Result evaluation

Post-NAS Optimization

Phase 4

Improving generated architectures using:

- Compression
- Re-training
- Selection
- Etc.

Phase 5

Writing Thesis

Needs to start as soon as possible!