Cifar-10

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Architecture | Acc/% | Params/M | Search Cost/gpu\*days | Search Method |
| ResNet18 + cutout | 96.01 ± 0.13 |  | - | - |
| DenseNet + Cutout | 97.44 | 26.2 | - | - |
| Enas | 0.963(direct\_final\_micro) | 3.9 | 0.45 | Rl |
| Darts | 0.974(direct\_test\_existmodel) | 3.35 | -1 | gradient-based |
| Ours | 0.965 | -1 | 74 | Evolution |
| Enas by cifar100 |  |  |  | Rl |
| Darts by cifar100 |  |  |  | gradient-based |
| Ours by cifar100 |  |  |  | Evolution |
| Enas by tiny-imagenet |  |  |  | Rl |
| Darts by tiny-imagenet |  |  |  | gradient-based |
| Ours by tiny-imagenet |  |  |  | Evolution |

Cifar-100

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Architecture | Acc/% | Params/M | Search Cost/gpu\*days | Search Method |
| ResNet18 + cutout | 78.04±0.24 |  | - | - |
| Densenet + CutOut | 82.82 | 25.6 | - | - |
| Enas | -1 | -1 | -1 | Rl |
| Darts | -1 | -1 | -1 | gradient-based |
| Ours | 0.742 | -1 | 24 | Evolution |
| Enas by cifar10 | 0.8128(direct\_final\_macro) | 21.3 | 0.32 | Rl |
| Darts by cifar10 | -1 | -1 | - | gradient-based |
| Ours by cifar10 |  |  |  | Evolution |
| Enas by tiny-imagenet |  |  |  | Rl |
| Darts by tiny-imagenet |  |  |  | gradient-based |
| Ours by tiny-imagenet |  |  |  | Evolution |

Tiny-imagenet

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Architecture | Val Acc/% | Params/M | Search Cost/gpu\*days | Search Method |
| Resnet |  |  | - | - |
| Densenet | 62.73 |  | - | - |
| Enas |  |  |  | Rl |
| Darts |  |  |  | gradient-based |
| Ours | -1 | -1 | -1 | Evolution |
| Enas by cifar10 |  |  |  | Rl |
| Darts by cifar10 |  |  |  | gradient-based |
| Ours by cifar10 |  |  |  | Evolution |
| Enas by cifar100 |  |  |  | Rl |
| Darts by cifar100 |  |  |  | gradient-based |
| Ours by cifar100 |  |  |  | Evolution |

Imagenet

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Architecture | Acc/% | Params/M | Search Cost/gpu\*days | Search Method |
| Resnet |  |  | - | - |
| Densenet |  |  | - | - |
| Enas by cifar10 |  |  |  | Rl |
| Darts by cifar10 |  |  |  | gradient-based |
| Ours by cifar10 |  |  |  | Evolution |
| Enas by cifar100 |  |  |  | Rl |
| Darts by cifar100 |  |  |  | gradient-based |
| Ours by cifar100 |  |  |  | Evolution |
| Enas by tiny-imagenet |  |  |  | Rl |
| Darts by tiny-imagenet |  |  |  | gradient-based |
| Ours by tiny-imagenet |  |  |  | Evolution |

Uwaterloo denoise

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Architecture |  | Psnr/dB | Params/M | Search Cost/gpu\*days | Search Method |
| Resnet |  |  |  | - | - |
| Densenet |  |  |  | - | - |
| Enas ？ |  |  |  |  | Rl |
| Darts ？ |  |  |  |  | gradient-based |
| Ours |  | 28.78 |  | 132 | Evolution |
| Enas by cifar10 |  |  |  |  | Rl |
| Darts by cifar10 |  |  |  |  | gradient-based |
| Ours by cifar10 |  |  |  |  | Evolution |
| Enas by cifar100 |  |  |  |  | Rl |
| Darts by cifar100 |  |  |  |  | gradient-based |
| Ours by cifar100 |  |  |  |  | Evolution |
| Enas by tiny-imagenet |  |  |  |  | Rl |
| Darts by tiny-imagenet |  |  |  |  | gradient-based |
| Ours by tiny-imagenet |  |  |  |  | Evolution |