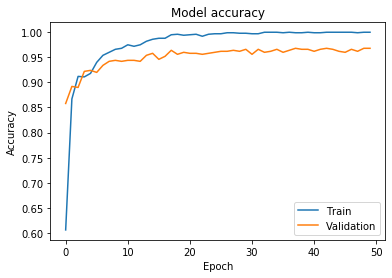
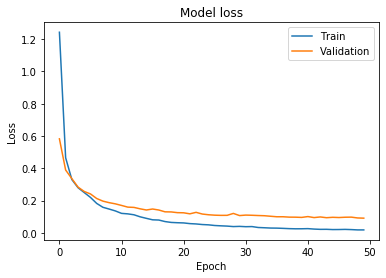
**Bearing**

**No Aug**

**inception\_v3**

Train: 100, Val: 96.80, Test: 95.40

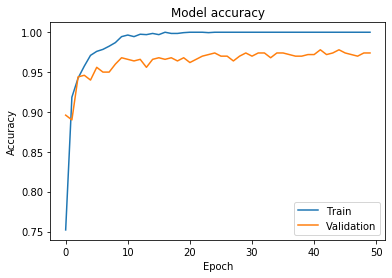
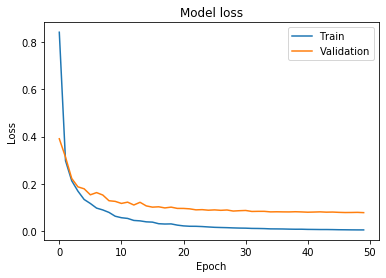
 

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 47 | 0 | 2 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 2 | 3 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 47 | 1 |
| 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 1 | 41 |

**Ensemble**

**inception\_v3\_Aug1**

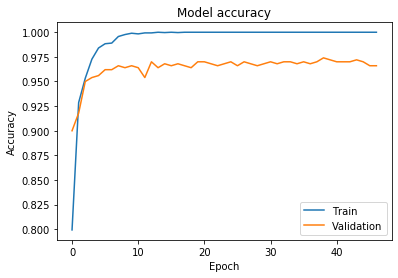
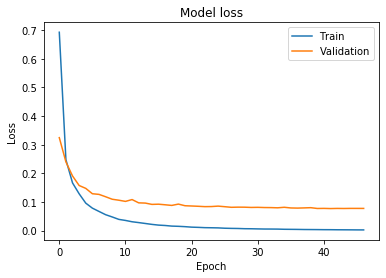
Train: 100, Val: 97.4, Test: 96.40

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 47 | 0 | 3 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 2 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 3 |
| 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 44 |

**inception\_v3\_Aug2**

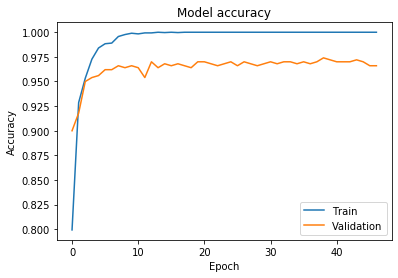
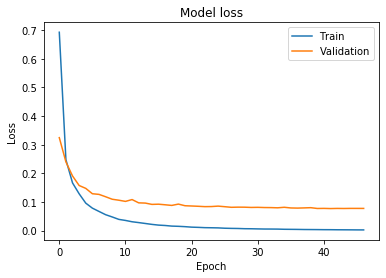
Train: 100, Val: 97.2, Test: 96.40

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 47 | 0 | 2 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 2 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 2 |
| 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 44 |

**inception\_v3\_Aug3**

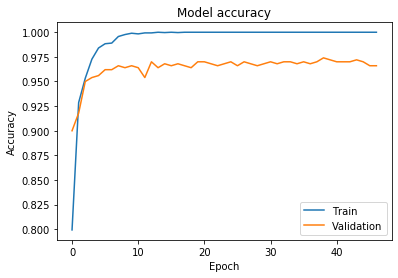
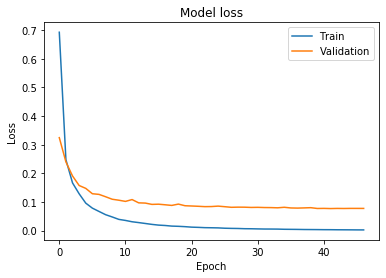
Train: 100, Val: 97.4, Test: 96.4

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 47 | 0 | 2 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 2 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 2 |
| 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 44 |

**inception\_v3\_Aug4**

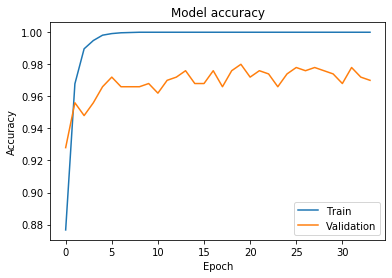
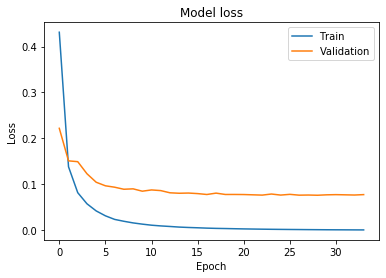
Train: 100, Val: 97.4, Test: 96.40

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 47 | 0 | 2 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 2 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 2 |
| 0 | 0 | 1 | 0 | 0 | 2 | 0 | 3 | 0 | 44 |

**inception\_v3\_Aug5**

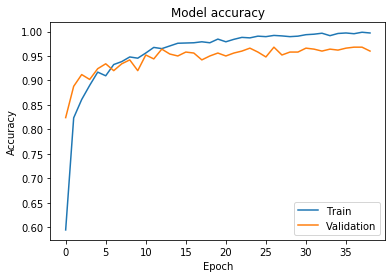
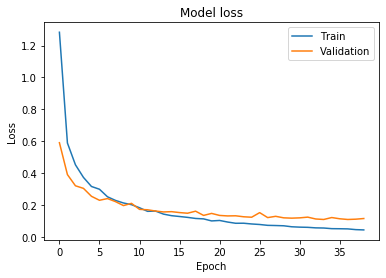
Train: 100, Val: 97.60 Test: 96.20

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 47 | 0 | 2 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | 2 | 4 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 47 | 2 |
| 0 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | 44 |

**inception\_v3\_Gan1**

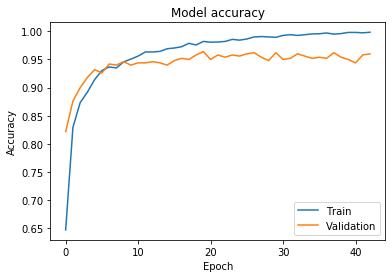
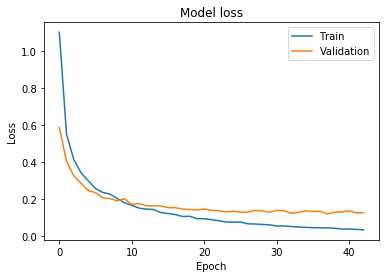
Train: 99.80, Val: 96.80, Test: 94

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 45 | 0 | 5 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 2 | 2 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 44 | 1 |
| 0 | 0 | 1 | 0 | 0 | 2 | 0 | 8 | 2 | 37 |

**inception\_v3\_Gan2**

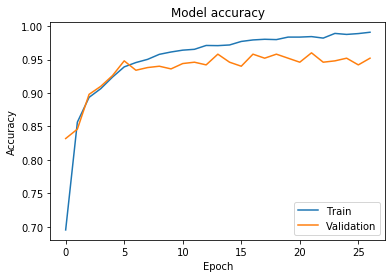
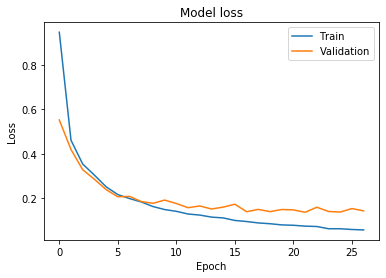
Train: 99.68, Val: 95.80, Test: 95.20

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 47 | 0 | 1 | 0 | 2 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 3 | 4 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 46 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 3 | 42 |

**inception\_v3\_Gan3**

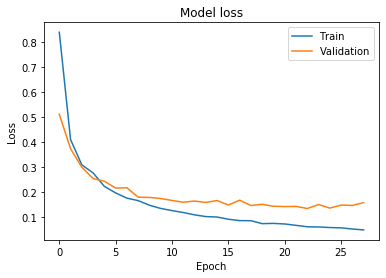
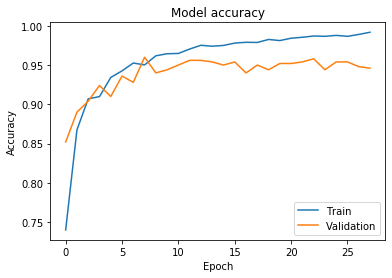
Train: 99.08, Val: 96, Test: 94.4

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 48 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 48 | 0 | 2 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 3 | 6 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 45 | 0 |
| 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 1 | 42 |

**inception\_v3\_Gan4**

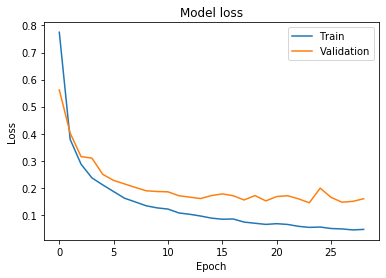
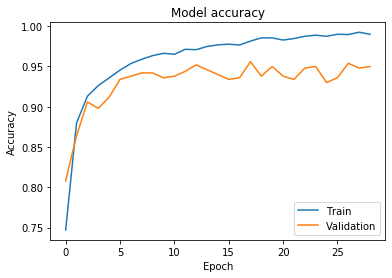
Train: 98.70, Val: 95.80, Test: 94.6

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 48 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 47 | 0 | 2 | 0 | 1 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 2 | 7 |
| 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 45 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 44 |

**inception\_v3\_Gan5**

Train: 98.9, Val: 95.0, Test: 94.6

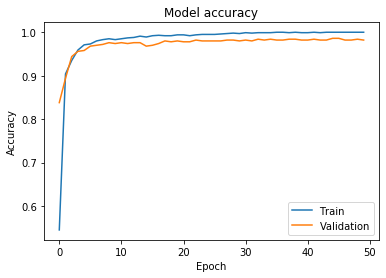
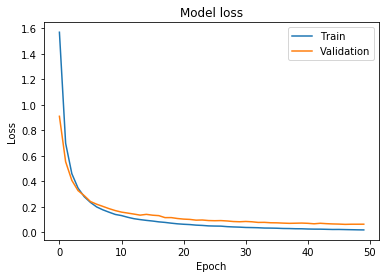
 

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 46 | 0 | 3 | 0 | 1 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 2 | 7 |
| 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 44 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 45 |

**mobilenet\_v2**

**No Aug**

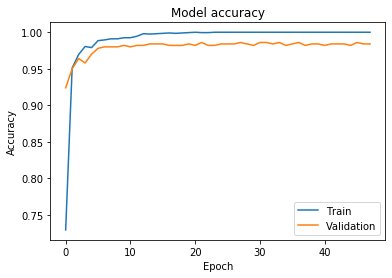
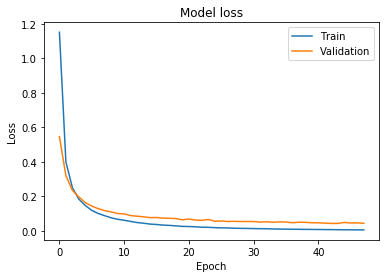
Train: 100, Val: 98.40, Test: 98

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 46 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 45 |

**mobilenet\_v2\_Aug1**

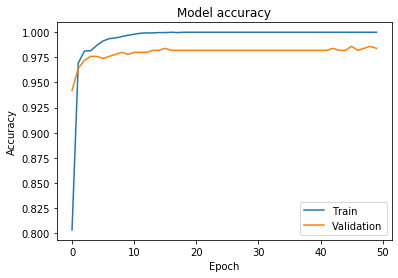
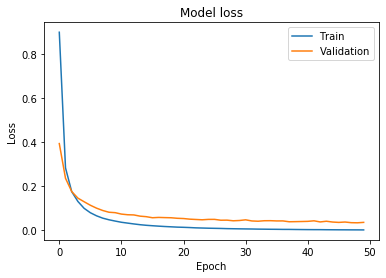
Train: 100, Val: 98.40, Test: 98.8

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 47 |

**mobilenet\_v2 Aug2**

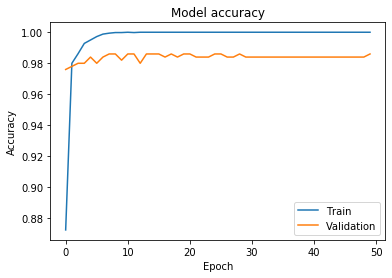
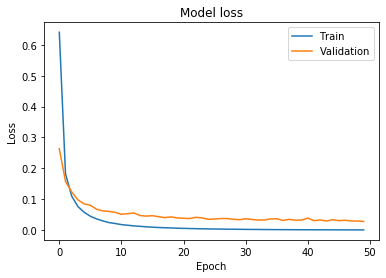
Train: 100, Val: 98.60, Test: 98.6

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 46 |

**mobilenet\_v2 Aug3**

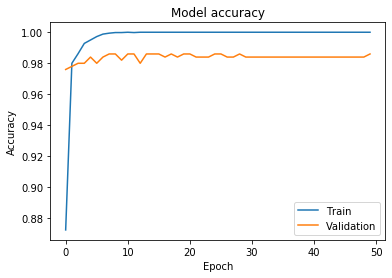
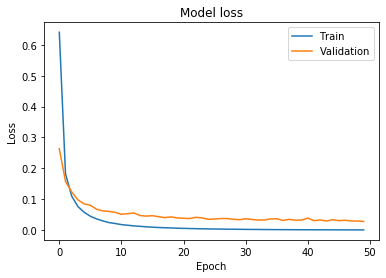
Train: 100, Val: 98.60, Test: 98.6

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 46 |

**mobilenet\_v2 Aug4**

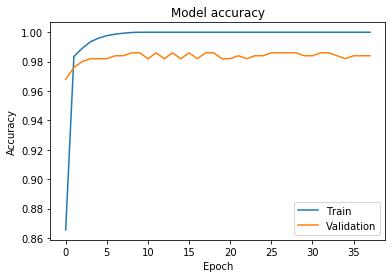
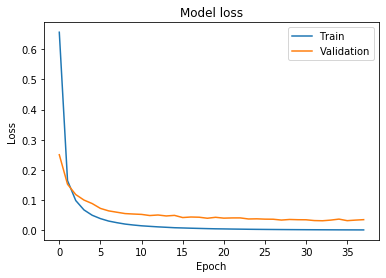
Train: 100, Val: 98.60, Test: 98.6

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 46 |

**mobilenet\_v2 Aug5**

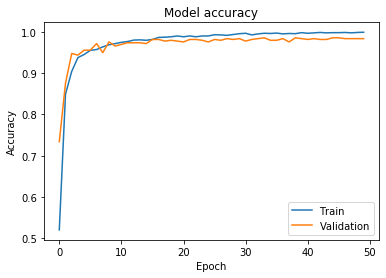
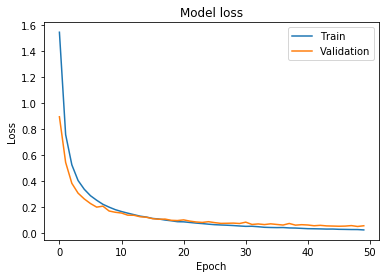
Train: 100, Val: 98.60, Test: 98.6

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 46 |

**mobilenet\_v2 Gan1**

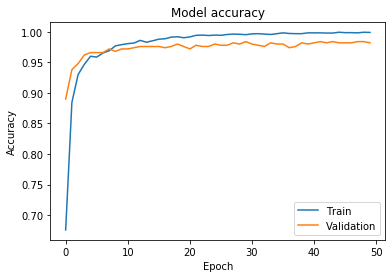
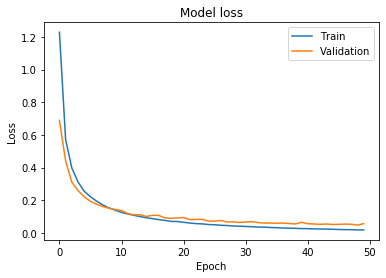
Train: 99.86, Val: 98.60, Test: 98.4

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 47 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 47 |

**mobilenet\_v2 Gan2**

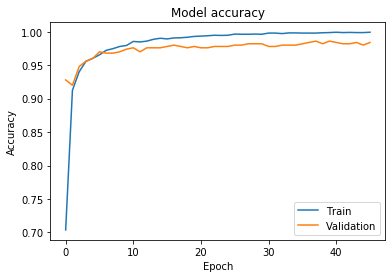
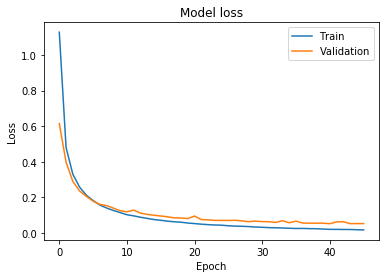
Train: 99.83, Val: 98.40, Test: 98.2

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 47 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 46 |

**mobilenet\_v2 Gan3**

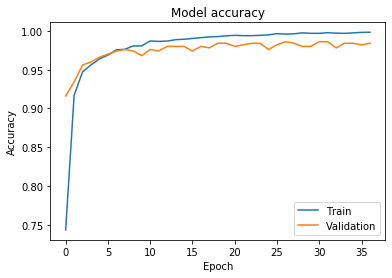
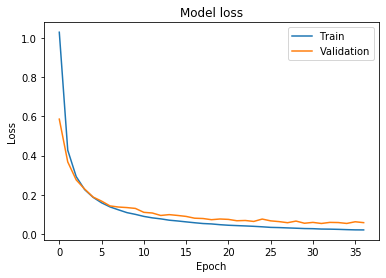
Train: 99.87, Val: 98.40, Test: 98

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 46 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 46 |

**mobilenet\_v2 Gan4**

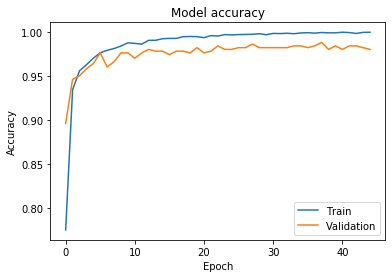
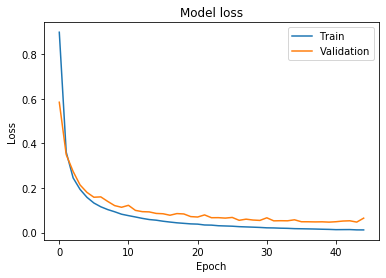
Train: 99.76, Val: 98.60, Test: 97.8

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 46 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 46 |

**mobilenet\_v2 Gan5**

Train: 99.92, Val: 98.40, Test: 98.4

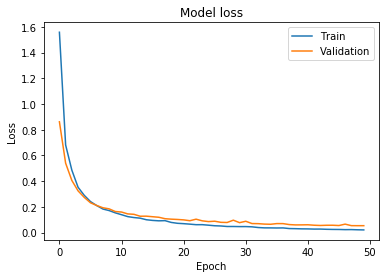
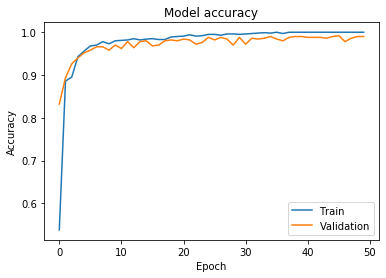
 

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 46 |

**ResNet 50**

Train: 100, Val: 99, Test: 98.4

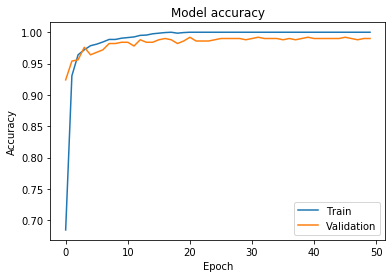
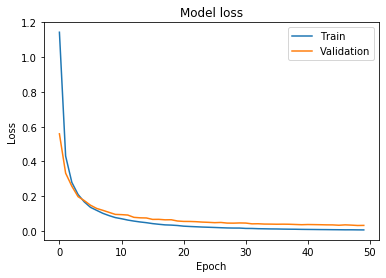
|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 1 | 1 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 47 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 48 |



**ResNet 50\_Aug1**

Train: 100, Val: 99, Test: 98.4

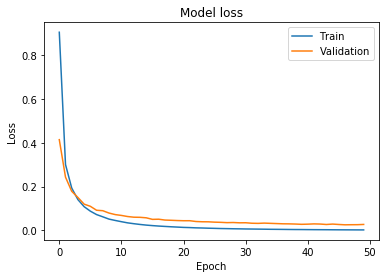
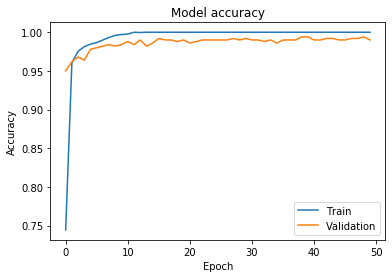
|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 1 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 48 |

**ResNet 50\_Aug2**

Train: 100, Val: 99.4, Test: 98.6

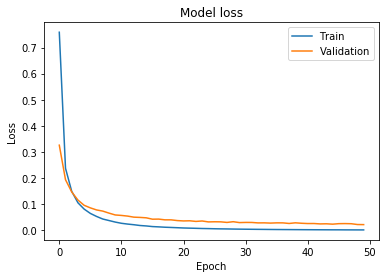
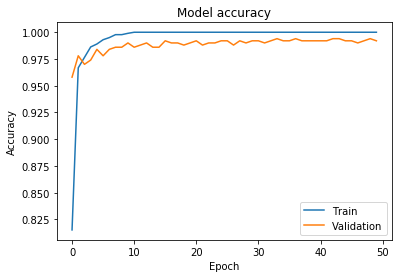
|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 1 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 49 |

**ResNet 50\_Aug3**

Train: 100, Val: 99.4, Test: 99.2

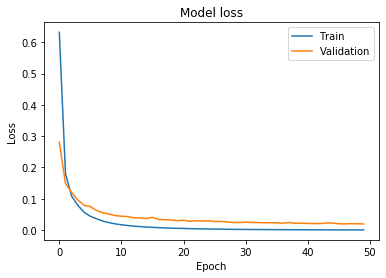
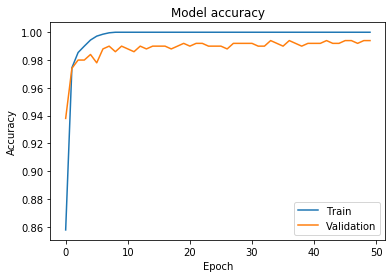
|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 49 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |

**ResNet 50\_Aug4**

Train: 100, Val: 99.4, Test: 99.2

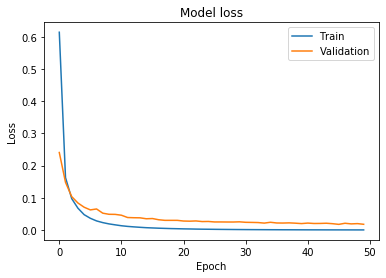
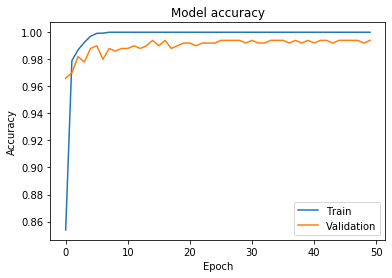
|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 49 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |

**ResNet 50\_Aug5**

Train: 100, Val: 99.4, Test: 99

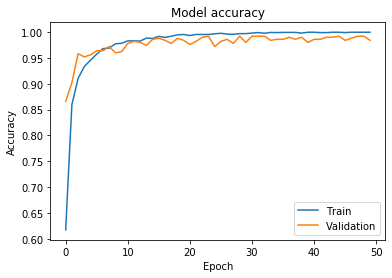
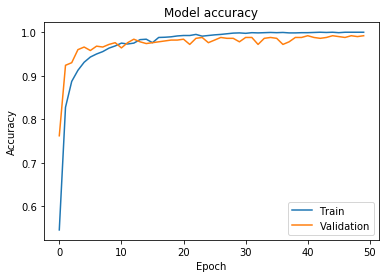
|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 1 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 49 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 |

**ResNet 50\_GAN1**

Train: 100, Val: 99.2, Test: 98

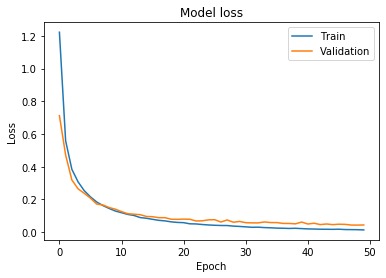
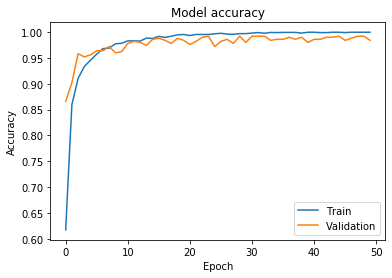
|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 2 | 0 | 0 | 0 | 48 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 2 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 47 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 47 |

**ResNet 50\_GAN2**

Train: 99.97, Val: 99.2, Test: 97.8

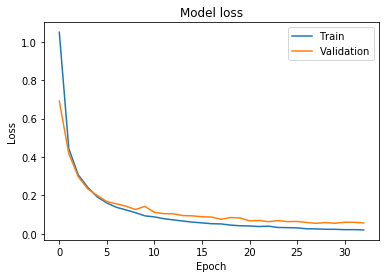
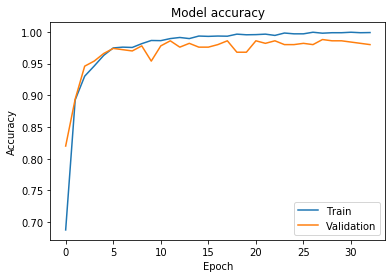
|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 2 | 0 | 0 | 0 | 48 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 1 | 2 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 47 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 47 |

**ResNet 50\_GAN3**

Train: 99.80, Val: 98.80, Test: 98

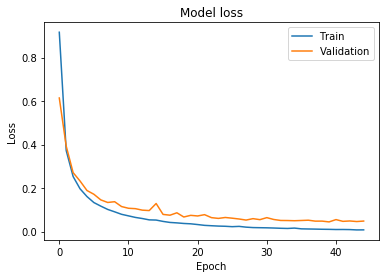
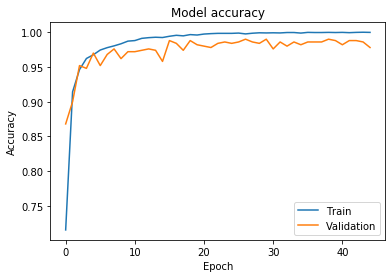
|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 2 | 0 | 0 | 0 | 48 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 2 |
| 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 46 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 48 |

**ResNet 50\_GAN4**

Train: 99.96, Val: 98.60, Test: 97.8

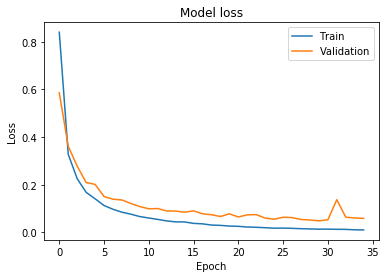
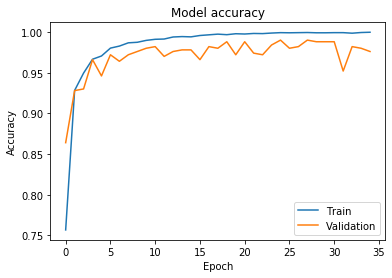
|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 2 | 0 | 0 | 0 | 48 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 2 |
| 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 45 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 48 |

**ResNet 50\_GAN4**

Train: 99.92, Val: 98.80, Test: 98.2

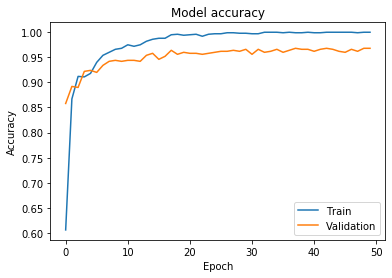
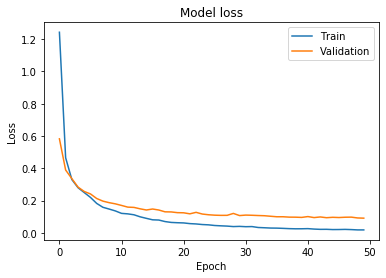
|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 2 | 0 | 0 | 0 | 48 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 2 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 47 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 48 |

**ImageDataGen**

**inception\_v3\_horizontal\_flip**

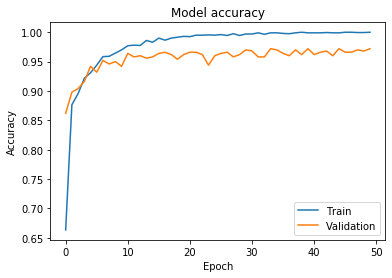
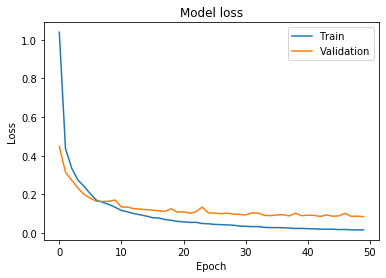
Train: 100, Val: 97.80, Test: 96.20

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 47 | 0 | 2 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 2 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 47 | 2 |
| 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 44 |

**inception\_v3\_vertical\_flip**

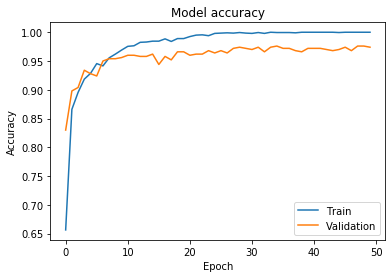
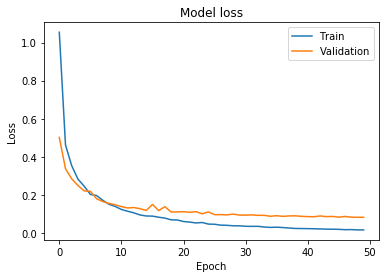
Train: 100, Val: 97.20, Test: 95.6

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 47 | 0 | 2 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 1 | 7 |
| 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 45 | 1 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 46 |

**inception\_v3\_width\_shift**

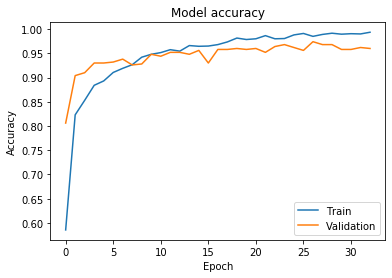
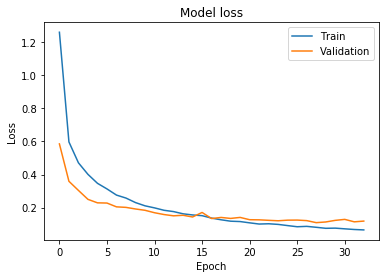
Train: 100, Val: 97.40, Test: 96.2

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 48 | 0 | 1 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 2 | 2 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 44 | 1 |
| 0 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | 44 |

**inception\_v3\_height\_shift**

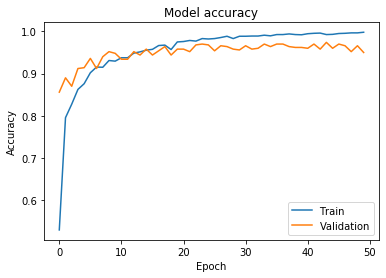
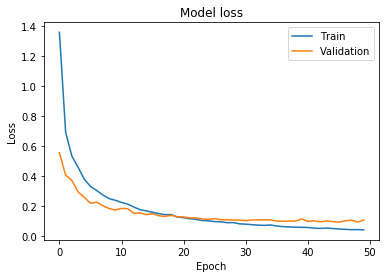
Train: 98.90, Val: 96.8, Test: 94.8

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 48 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 47 | 0 | 2 | 0 | 1 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 3 | 2 |
| 0 | 0 | 0 | 1 | 0 | 1 | 1 | 3 | 42 | 2 |
| 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 43 |

**inception\_v3\_rotation\_shift**

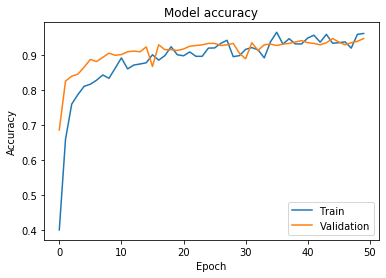
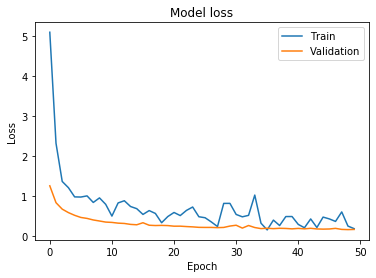
Train: 99.50, Val: 97, Test: 95

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 48 | 0 | 2 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 1 | 4 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 44 | 3 |
| 0 | 0 | 1 | 0 | 0 | 2 | 0 | 5 | 1 | 41 |

**inception\_v3\_brightness**

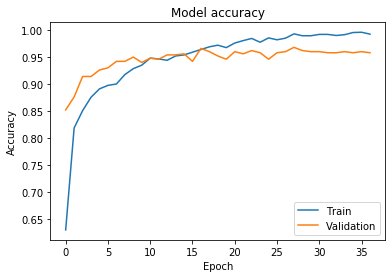
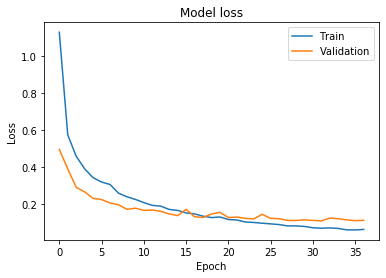
Train: 96, Val: 94, Test: 92.4

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 46 | 0 | 0 | 0 | 2 | 0 | 2 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 44 | 0 | 4 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 2 | 3 |
| 0 | 0 | 0 | 1 | 0 | 2 | 1 | 4 | 41 | 1 |
| 0 | 0 | 1 | 0 | 0 | 3 | 0 | 8 | 2 | 36 |

**inception\_v3\_zoom**

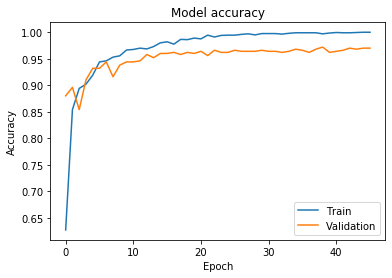
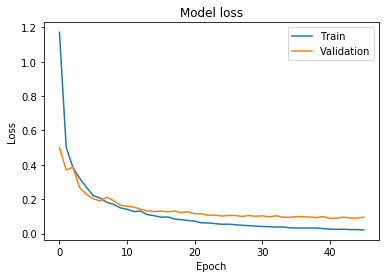
Train: 99.20, Val: 95.80, Test: 95.6

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 3 | 4 |
| 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 46 | 1 |
| 0 | 0 | 1 | 0 | 0 | 4 | 0 | 4 | 1 | 40 |

**inception\_v3\_shear**

Train: 99.95, Val: 96.40, Test: 95.2

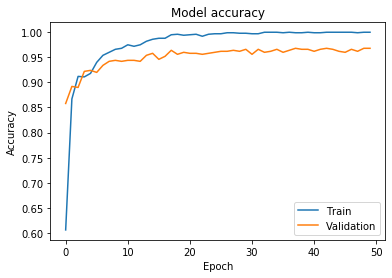
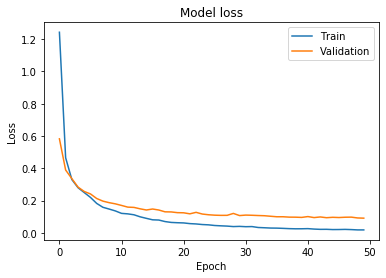
 

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 46 | 0 | 3 | 0 | 1 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | 2 | 4 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 46 | 2 |
| 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 1 | 42 |

**ImageDataGen**

**mobilenet\_v2\_horizontal\_flip**

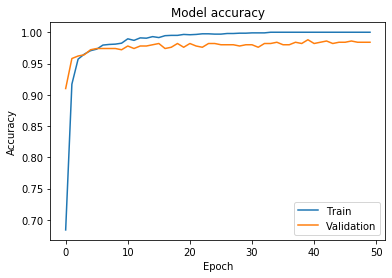
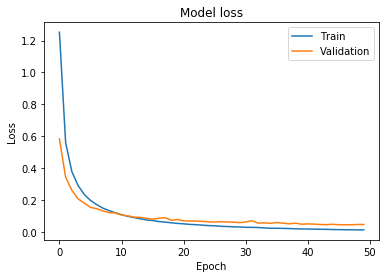
Train: 100, Val: 98.6, Test: 98.8

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 47 |

**mobilenet\_v2\_vertical\_flip**

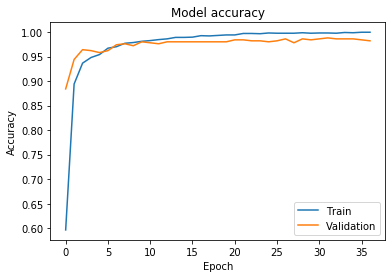
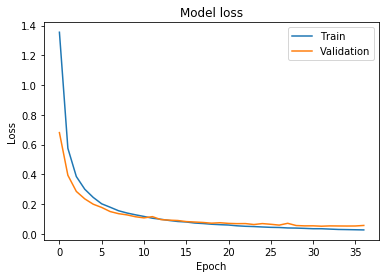
Train: 99.95, Val: 98.20, Test: 97.8

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 46 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 45 |

**mobilenet\_v2\_width\_shift**

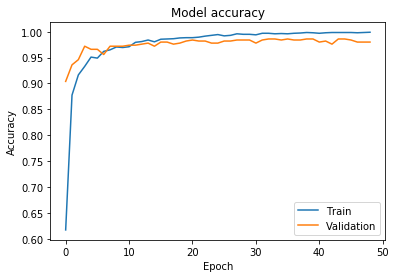
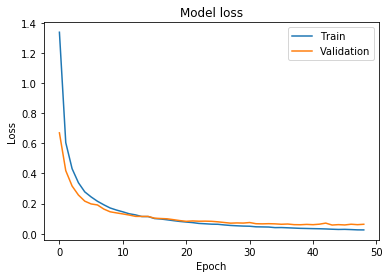
Train: 99.95, Val: 98.6, Test: 98.8

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 48 |

**mobilenet\_v2\_height\_shift**

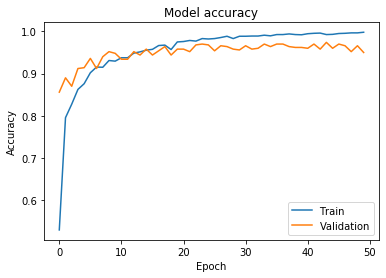
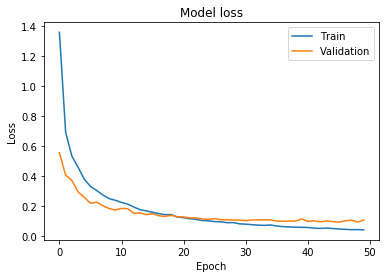
Train: 99.85, Val: 98.6, Test: 98

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 46 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 46 |

**mobilenet\_v2\_rotation\_shift**

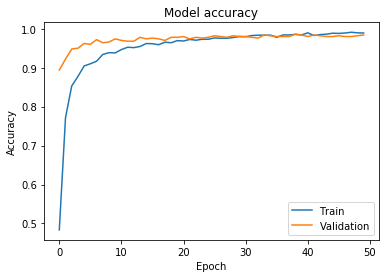
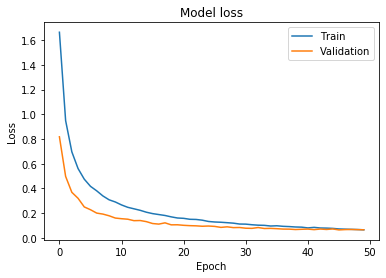
Train: 99.95, Val: 98.6, Test: 98.6

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 47 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 48 |

**mobilenet\_v2\_brightness**

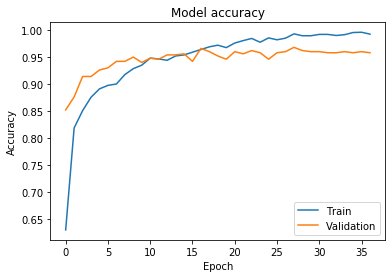
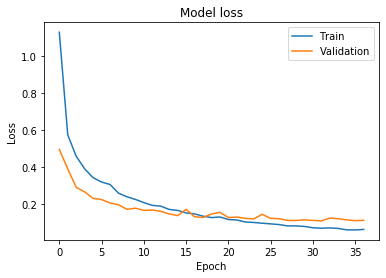
Train: 98.90, Val: 98.40, Test: 99

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 47 |

**mobilenet\_v2\_zoom**

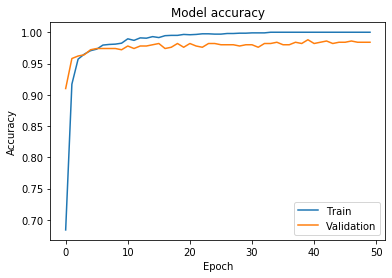
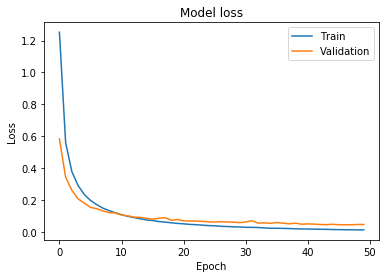
Train: 99.90, Val: 98.2, Test: 98.2

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 46 |

**mobilenet\_v2\_shear**

Train: 100, Val: 98.40, Test: 98.6

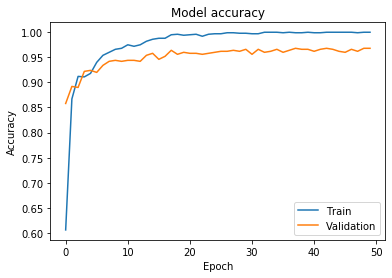
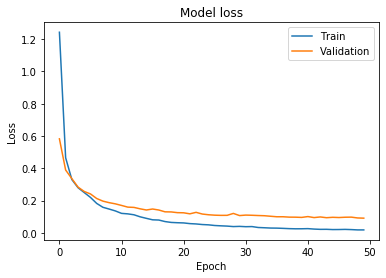
 

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 47 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 47 |

**ImageDataGen**

**resnet\_50\_horizontal\_flip**

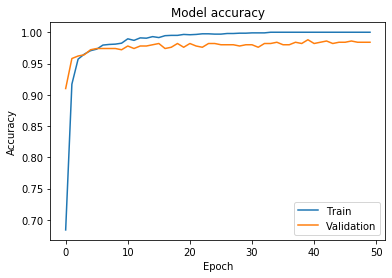
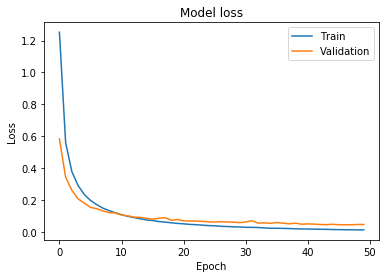
Train: 100, Val: 98.6, Test: 98.8

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 47 |

**resnet\_50\_vertical\_flip**

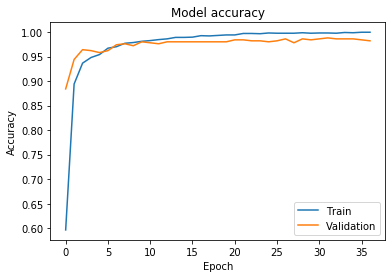
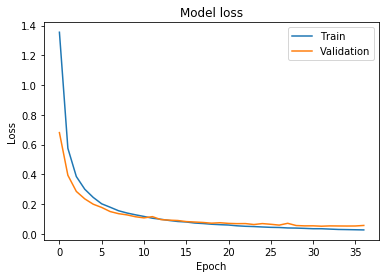
Train: 99.95, Val: 98.20, Test: 97.8

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 46 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 45 |

**resnet\_50\_width\_shift**

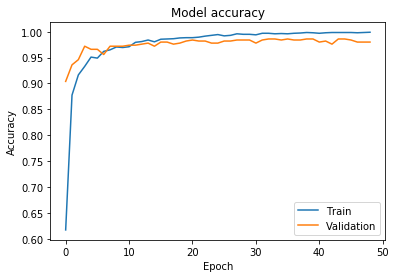
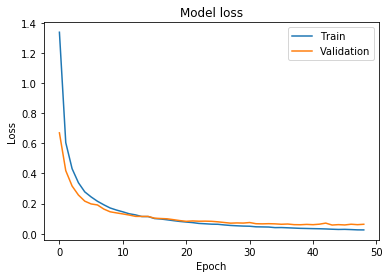
Train: 100, Val: 99.2, Test: 98.4

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 2 | 0 | 0 | 0 | 48 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 48 |

**resnet\_50\_height\_shift**

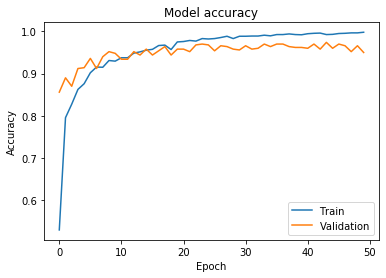
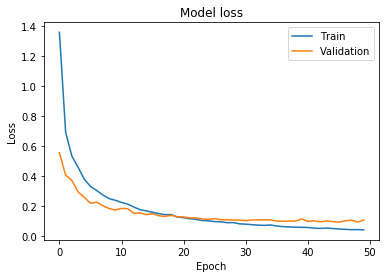
Train: 100, Val: 99, Test: 98

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 2 | 0 | 0 | 0 | 48 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 0 | 3 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 47 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 48 |

**resnet\_50\_rotation\_shift**

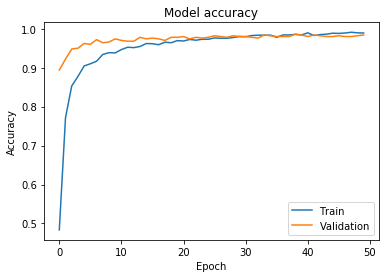
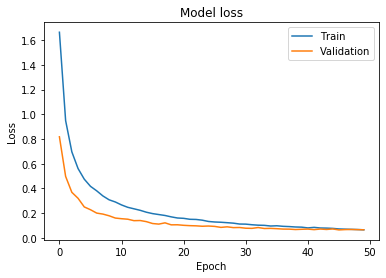
Train: 100, Val: 99, Test: 98.4

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 48 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 47 |

**resnet\_50\_brightness**

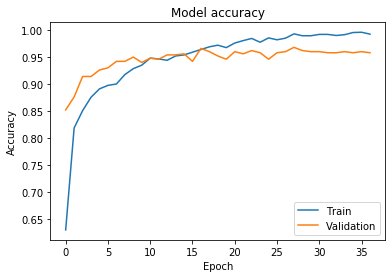
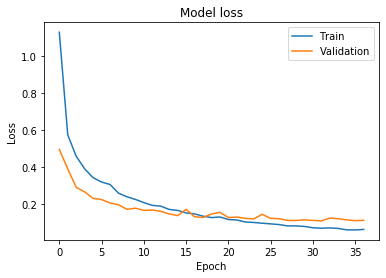
Train: 99.90, Val: 97.80, Test: 96

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 48 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 3 | 0 | 0 | 0 | 47 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 0 | 3 |
| 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 42 | 3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 46 |

**resnet\_50\_zoom**

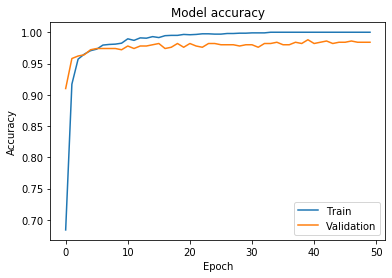
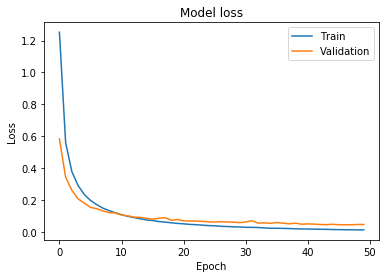
Train: 99.95, Val: 98.8, Test: 99

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 1 | 2 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 49 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 49 |

**resnet\_50\_shear**

Train: 100, Val: 99.0, Test: 98.8

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 48 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 48 |

**Original**

|  |  |
| --- | --- |
| **Model** | **Accuracy** |
| inception\_v3 | Train: 100, Val: 96.80, Test: 95.40 |
| mobilenet\_v2 | Train: 100, Val: 98.40, Test: 98 |
| ResNet 50 | Train: 100, Val: 99, Test: 98.4 |

**Ensemble**

|  |  |
| --- | --- |
| **Model** | **Accuracy** |
| inception\_v3 | Train: 100, Val: 97.4, Test: 96.40 |
| mobilenet\_v2 | Train: 100, Val: 98.40, Test: 98.8 |
| ResNet 50 | Train: 100, Val: 99, Test: 98.4 |

**GAN**

|  |  |
| --- | --- |
| **Model** | **Accuracy** |
| inception\_v3 | Train: 99.80, Val: 96.80, Test: 94 |
| mobilenet\_v2 | Train: 99.86, Val: 98.60, Test: 98.4 |
| ResNet 50 | Train: 100, Val: 99.2, Test: 98 |

**DataGen**

|  |  |  |
| --- | --- | --- |
| **Type** | **Model** | **Accuracy** |
| horizontal\_flip | inception\_v3 | Train: 100, Val: 97.80, Test: 96.20 |
| mobilenet\_v2 | Train: 100, Val: 98.6, Test: 98.8 |
| ResNet 50 | Train: 100, Val: 98.6, Test: 98.8 |
| vertical\_flip | inception\_v3 | Train: 100, Val: 97.20, Test: 95.6 |
| mobilenet\_v2 | Train: 99.95, Val: 98.20, Test: 97.8 |
| ResNet 50 | Train: 99.95, Val: 98.20, Test: 97.8 |
| width\_shift | inception\_v3 | Train: 100, Val: 97.40, Test: 96.2 |
| mobilenet\_v2 | Train: 99.95, Val: 98.6, Test: 98.8 |
| ResNet 50 | Train: 100, Val: 99.2, Test: 98.4 |
| height\_shift | inception\_v3 | Train: 98.90, Val: 96.8, Test: 94.8 |
| mobilenet\_v2 | Train: 99.85, Val: 98.6, Test: 98 |
| ResNet 50 | Train: 100, Val: 99, Test: 98 |
| rotation\_shift | inception\_v3 | Train: 99.50, Val: 97, Test: 95 |
| mobilenet\_v2 | Train: 99.95, Val: 98.6, Test: 98.6 |
| ResNet 50 | Train: 100, Val: 99, Test: 98.4 |
| brightness | inception\_v3 | Train: 96, Val: 94, Test: 92.4 |
| mobilenet\_v2 | Train: 98.90, Val: 98.40, Test: 99 |
| ResNet 50 | Train: 99.90, Val: 97.80, Test: 96 |
| zoom | inception\_v3 | Train: 99.20, Val: 95.80, Test: 95.6 |
| mobilenet\_v2 | Train: 99.90, Val: 98.2, Test: 98.2 |
| ResNet 50 | Train: 99.95, Val: 98.8, Test: 99 |
| shear | inception\_v3 | Train: 99.95, Val: 96.40, Test: 95.2 |
| mobilenet\_v2 | Train: 100, Val: 98.40, Test: 98.6 |
| ResNet 50 | Train: 100, Val: 99.0, Test: 98.8 |

**Increment**

|  |  |  |
| --- | --- | --- |
| **Model** | **Aug** | **Accuracy** |
| inception\_v3 | 1 | Train: 100, Val: 97.4, Test: 96.40 |
|  | 2 | Train: 100, Val: 97.2, Test: 96.40 |
|  | 3 | Train: 100, Val: 97.4, Test: 96.4 |
|  | 4 | Train: 100, Val: 97.4, Test: 96.40 |
|  | 5 | Train: 100, Val: 97.60 Test: 96.20 |
| mobilenet\_v2 | 1 | Train: 100, Val: 98.40, Test: 98.8 |
|  | 2 | Train: 100, Val: 98.60, Test: 98.6 |
|  | 3 | Train: 100, Val: 98.60, Test: 98.6 |
|  | 4 | Train: 100, Val: 98.60, Test: 98.6 |
|  | 5 | Train: 100, Val: 98.60, Test: 98.6 |
| ResNet 50 | 1 | Train: 100, Val: 99, Test: 98.4 |
|  | 2 | Train: 100, Val: 99.4, Test: 98.6 |
|  | 3 | Train: 100, Val: 99.4, Test: 99.2 |
|  | 4 | Train: 100, Val: 99.4, Test: 99.2 |
|  | 5 | Train: 100, Val: 99.4, Test: 99 |

|  |  |  |
| --- | --- | --- |
| **Model** | **GAN** | **Accuracy** |
| inception\_v3 | 1 | Train: 99.80, Val: 96.80, Test: 94 |
|  | 2 | Train: 99.68, Val: 95.80, Test: 95.20 |
|  | 3 | Train: 99.08, Val: 96, Test: 94.4 |
|  | 4 | Train: 98.70, Val: 95.80, Test: 94.6 |
|  | 5 | Train: 98.9, Val: 95.0, Test: 94.6 |
| mobilenet\_v2 | 1 | Train: 99.86, Val: 98.60, Test: 98.4 |
|  | 2 | Train: 99.83, Val: 98.40, Test: 98.2 |
|  | 3 | Train: 99.87, Val: 98.40, Test: 98 |
|  | 4 | Train: 99.76, Val: 98.60, Test: 97.8 |
|  | 5 | Train: 99.92, Val: 98.40, Test: 98.4 |
| ResNet 50 | 1 | Train: 100, Val: 99.2, Test: 98 |
|  | 2 | Train: 99.97, Val: 99.2, Test: 97.8 |
|  | 3 | Train: 99.80, Val: 98.80, Test: 98 |
|  | 4 | Train: 99.96, Val: 98.60, Test: 97.8 |
|  | 5 | Train: 99.92, Val: 98.80, Test: 98.2 |

|  |  |  |
| --- | --- | --- |
| **Model** | **DataGen\_Combined** | **Accuracy** |
| inception\_v3 | 1 | Train: 99.80, Val: 96.80, Test: 94 |
|  | 2 | Train: 99.68, Val: 95.80, Test: 95.20 |
|  | 3 | Train: 99.08, Val: 96, Test: 94.4 |
|  | 4 | Train: 98.70, Val: 95.80, Test: 94.6 |
|  | 5 | Train: 98.9, Val: 95.0, Test: 94.6 |
| mobilenet\_v2 | 1 | Train: 99.86, Val: 98.60, Test: 98.4 |
|  | 2 | Train: 99.83, Val: 98.40, Test: 98.2 |
|  | 3 | Train: 99.87, Val: 98.40, Test: 98 |
|  | 4 | Train: 99.76, Val: 98.60, Test: 97.8 |
|  | 5 | Train: 99.92, Val: 98.40, Test: 98.4 |
| ResNet 50 | 1 | Train: 99.95, Val: 98.0, Test: 96 |
|  | 2 | Train: 100, Val: 97.6, Test: 96 |
|  | 3 | Train: 100, Val: 97.6, Test: 96.8 |
|  | 4 | Train: 99.90, Val: 97, Test: 96 |
|  | 5 | Train: 99.95, Val: 97.4, Test: 96.2 |