Train on 6400 samples, validate on 1600 samples

Epoch 1/20

6400/6400 [==============================] - 216s 34ms/step - loss: 1.3973 - dense\_5\_loss: 0.7543 - dense\_6\_loss: 0.6430 - dense\_5\_acc: 0.5092 - dense\_6\_acc: 0.6277 - val\_loss: 0.9123 - val\_dense\_5\_loss: 0.6489 - val\_dense\_6\_loss: 0.2634 - val\_dense\_5\_acc: 0.6250 - val\_dense\_6\_acc: 0.9044

Epoch 2/20

6400/6400 [==============================] - 210s 33ms/step - loss: 0.7587 - dense\_5\_loss: 0.4957 - dense\_6\_loss: 0.2630 - dense\_5\_acc: 0.7855 - dense\_6\_acc: 0.8958 - val\_loss: 0.4175 - val\_dense\_5\_loss: 0.2232 - val\_dense\_6\_loss: 0.1943 - val\_dense\_5\_acc: 0.9294 - val\_dense\_6\_acc: 0.9312

Epoch 3/20

6400/6400 [==============================] - 211s 33ms/step - loss: 0.5002 - dense\_5\_loss: 0.2749 - dense\_6\_loss: 0.2252 - dense\_5\_acc: 0.9172 - dense\_6\_acc: 0.9173 - val\_loss: 0.3835 - val\_dense\_5\_loss: 0.2014 - val\_dense\_6\_loss: 0.1822 - val\_dense\_5\_acc: 0.9319 - val\_dense\_6\_acc: 0.9369

Epoch 4/20

6400/6400 [==============================] - 211s 33ms/step - loss: 0.4191 - dense\_5\_loss: 0.2239 - dense\_6\_loss: 0.1952 - dense\_5\_acc: 0.9273 - dense\_6\_acc: 0.9281 - val\_loss: 0.3611 - val\_dense\_5\_loss: 0.1829 - val\_dense\_6\_loss: 0.1781 - val\_dense\_5\_acc: 0.9281 - val\_dense\_6\_acc: 0.9381

Epoch 5/20

6400/6400 [==============================] - 212s 33ms/step - loss: 0.3820 - dense\_5\_loss: 0.2024 - dense\_6\_loss: 0.1796 - dense\_5\_acc: 0.9322 - dense\_6\_acc: 0.9345 - val\_loss: 0.3653 - val\_dense\_5\_loss: 0.1870 - val\_dense\_6\_loss: 0.1783 - val\_dense\_5\_acc: 0.9187 - val\_dense\_6\_acc: 0.9356

Epoch 6/20

6400/6400 [==============================] - 210s 33ms/step - loss: 0.3501 - dense\_5\_loss: 0.1837 - dense\_6\_loss: 0.1664 - dense\_5\_acc: 0.9375 - dense\_6\_acc: 0.9370 - val\_loss: 0.4024 - val\_dense\_5\_loss: 0.2111 - val\_dense\_6\_loss: 0.1913 - val\_dense\_5\_acc: 0.9319 - val\_dense\_6\_acc: 0.9344

Epoch 7/20

6400/6400 [==============================] - 210s 33ms/step - loss: 0.3296 - dense\_5\_loss: 0.1726 - dense\_6\_loss: 0.1570 - dense\_5\_acc: 0.9400 - dense\_6\_acc: 0.9427 - val\_loss: 0.3464 - val\_dense\_5\_loss: 0.1763 - val\_dense\_6\_loss: 0.1701 - val\_dense\_5\_acc: 0.9331 - val\_dense\_6\_acc: 0.9413

Epoch 8/20

6400/6400 [==============================] - 213s 33ms/step - loss: 0.3214 - dense\_5\_loss: 0.1664 - dense\_6\_loss: 0.1550 - dense\_5\_acc: 0.9369 - dense\_6\_acc: 0.9409 - val\_loss: 0.3514 - val\_dense\_5\_loss: 0.1806 - val\_dense\_6\_loss: 0.1708 - val\_dense\_5\_acc: 0.9294 - val\_dense\_6\_acc: 0.9400

Epoch 9/20

6400/6400 [==============================] - 218s 34ms/step - loss: 0.2990 - dense\_5\_loss: 0.1566 - dense\_6\_loss: 0.1423 - dense\_5\_acc: 0.9453 - dense\_6\_acc: 0.9481 - val\_loss: 0.3767 - val\_dense\_5\_loss: 0.1980 - val\_dense\_6\_loss: 0.1787 - val\_dense\_5\_acc: 0.9112 - val\_dense\_6\_acc: 0.9262

Epoch 10/20

6400/6400 [==============================] - 213s 33ms/step - loss: 0.2735 - dense\_5\_loss: 0.1412 - dense\_6\_loss: 0.1323 - dense\_5\_acc: 0.9509 - dense\_6\_acc: 0.9522 - val\_loss: 0.3743 - val\_dense\_5\_loss: 0.1971 - val\_dense\_6\_loss: 0.1771 - val\_dense\_5\_acc: 0.9319 - val\_dense\_6\_acc: 0.9350

Epoch 11/20

6400/6400 [==============================] - 214s 33ms/step - loss: 0.2707 - dense\_5\_loss: 0.1375 - dense\_6\_loss: 0.1332 - dense\_5\_acc: 0.9519 - dense\_6\_acc: 0.9502 - val\_loss: 0.3690 - val\_dense\_5\_loss: 0.1915 - val\_dense\_6\_loss: 0.1775 - val\_dense\_5\_acc: 0.9381 - val\_dense\_6\_acc: 0.9362

Epoch 12/20

6400/6400 [==============================] - 214s 33ms/step - loss: 0.2455 - dense\_5\_loss: 0.1257 - dense\_6\_loss: 0.1198 - dense\_5\_acc: 0.9566 - dense\_6\_acc: 0.9567 - val\_loss: 0.3773 - val\_dense\_5\_loss: 0.1952 - val\_dense\_6\_loss: 0.1821 - val\_dense\_5\_acc: 0.9362 - val\_dense\_6\_acc: 0.9362

Epoch 13/20

6400/6400 [==============================] - 213s 33ms/step - loss: 0.2261 - dense\_5\_loss: 0.1173 - dense\_6\_loss: 0.1088 - dense\_5\_acc: 0.9589 - dense\_6\_acc: 0.9594 - val\_loss: 0.3796 - val\_dense\_5\_loss: 0.1956 - val\_dense\_6\_loss: 0.1840 - val\_dense\_5\_acc: 0.9237 - val\_dense\_6\_acc: 0.9312

Epoch 14/20

6400/6400 [==============================] - 213s 33ms/step - loss: 0.2239 - dense\_5\_loss: 0.1157 - dense\_6\_loss: 0.1082 - dense\_5\_acc: 0.9592 - dense\_6\_acc: 0.9598 - val\_loss: 0.4324 - val\_dense\_5\_loss: 0.2218 - val\_dense\_6\_loss: 0.2107 - val\_dense\_5\_acc: 0.9356 - val\_dense\_6\_acc: 0.9306

Epoch 15/20

6400/6400 [==============================] - 218s 34ms/step - loss: 0.2133 - dense\_5\_loss: 0.1100 - dense\_6\_loss: 0.1033 - dense\_5\_acc: 0.9609 - dense\_6\_acc: 0.9603 - val\_loss: 0.3964 - val\_dense\_5\_loss: 0.2026 - val\_dense\_6\_loss: 0.1939 - val\_dense\_5\_acc: 0.9356 - val\_dense\_6\_acc: 0.9344

Epoch 16/20

6400/6400 [==============================] - 214s 33ms/step - loss: 0.1955 - dense\_5\_loss: 0.1013 - dense\_6\_loss: 0.0942 - dense\_5\_acc: 0.9628 - dense\_6\_acc: 0.9647 - val\_loss: 0.4275 - val\_dense\_5\_loss: 0.2274 - val\_dense\_6\_loss: 0.2001 - val\_dense\_5\_acc: 0.9325 - val\_dense\_6\_acc: 0.9325

Epoch 17/20

6400/6400 [==============================] - 214s 33ms/step - loss: 0.1773 - dense\_5\_loss: 0.0911 - dense\_6\_loss: 0.0862 - dense\_5\_acc: 0.9652 - dense\_6\_acc: 0.9658 - val\_loss: 0.3892 - val\_dense\_5\_loss: 0.2012 - val\_dense\_6\_loss: 0.1880 - val\_dense\_5\_acc: 0.9325 - val\_dense\_6\_acc: 0.9381

Epoch 18/20

6400/6400 [==============================] - 216s 34ms/step - loss: 0.1711 - dense\_5\_loss: 0.0911 - dense\_6\_loss: 0.0801 - dense\_5\_acc: 0.9675 - dense\_6\_acc: 0.9708 - val\_loss: 0.4078 - val\_dense\_5\_loss: 0.2125 - val\_dense\_6\_loss: 0.1953 - val\_dense\_5\_acc: 0.9356 - val\_dense\_6\_acc: 0.9394

Epoch 19/20

6400/6400 [==============================] - 216s 34ms/step - loss: 0.1542 - dense\_5\_loss: 0.0791 - dense\_6\_loss: 0.0751 - dense\_5\_acc: 0.9720 - dense\_6\_acc: 0.9722 - val\_loss: 0.4091 - val\_dense\_5\_loss: 0.2101 - val\_dense\_6\_loss: 0.1990 - val\_dense\_5\_acc: 0.9369 - val\_dense\_6\_acc: 0.9331

Epoch 20/20

6400/6400 [==============================] - 213s 33ms/step - loss: 0.1451 - dense\_5\_loss: 0.0753 - dense\_6\_loss: 0.0698 - dense\_5\_acc: 0.9725 - dense\_6\_acc: 0.9756 - val\_loss: 0.4572 - val\_dense\_5\_loss: 0.2444 - val\_dense\_6\_loss: 0.2129 - val\_dense\_5\_acc: 0.9312 - val\_dense\_6\_acc: 0.9350

Train on 6400 samples, validate on 1600 samples

Epoch 1/10

6400/6400 [==============================] - 107s 17ms/step - loss: 0.9222 - dense\_29\_loss: 0.5709 - dense\_30\_loss: 0.3514 - dense\_29\_acc: 0.7047 - dense\_30\_acc: 0.8472 - val\_loss: 0.6583 - val\_dense\_29\_loss: 0.4693 - val\_dense\_30\_loss: 0.1891 - val\_dense\_29\_acc: 0.7800 - val\_dense\_30\_acc: 0.9269

Epoch 2/10

6400/6400 [==============================] - 104s 16ms/step - loss: 0.6872 - dense\_29\_loss: 0.4793 - dense\_30\_loss: 0.2080 - dense\_29\_acc: 0.7742 - dense\_30\_acc: 0.9244 - val\_loss: 0.6383 - val\_dense\_29\_loss: 0.4563 - val\_dense\_30\_loss: 0.1820 - val\_dense\_29\_acc: 0.7862 - val\_dense\_30\_acc: 0.9294

Epoch 3/10

6400/6400 [==============================] - 104s 16ms/step - loss: 0.6306 - dense\_29\_loss: 0.4529 - dense\_30\_loss: 0.1777 - dense\_29\_acc: 0.7908 - dense\_30\_acc: 0.9333 - val\_loss: 0.6278 - val\_dense\_29\_loss: 0.4501 - val\_dense\_30\_loss: 0.1777 - val\_dense\_29\_acc: 0.7962 - val\_dense\_30\_acc: 0.9312

Epoch 4/10

6400/6400 [==============================] - 104s 16ms/step - loss: 0.5899 - dense\_29\_loss: 0.4283 - dense\_30\_loss: 0.1616 - dense\_29\_acc: 0.7992 - dense\_30\_acc: 0.9416 - val\_loss: 0.6266 - val\_dense\_29\_loss: 0.4548 - val\_dense\_30\_loss: 0.1718 - val\_dense\_29\_acc: 0.7919 - val\_dense\_30\_acc: 0.9406

Epoch 5/10

6400/6400 [==============================] - 104s 16ms/step - loss: 0.5697 - dense\_29\_loss: 0.4185 - dense\_30\_loss: 0.1512 - dense\_29\_acc: 0.8067 - dense\_30\_acc: 0.9433 - val\_loss: 0.6492 - val\_dense\_29\_loss: 0.4705 - val\_dense\_30\_loss: 0.1787 - val\_dense\_29\_acc: 0.7875 - val\_dense\_30\_acc: 0.9362

Epoch 6/10

6400/6400 [==============================] - 105s 16ms/step - loss: 0.5525 - dense\_29\_loss: 0.4065 - dense\_30\_loss: 0.1461 - dense\_29\_acc: 0.8095 - dense\_30\_acc: 0.9464 - val\_loss: 0.6250 - val\_dense\_29\_loss: 0.4493 - val\_dense\_30\_loss: 0.1757 - val\_dense\_29\_acc: 0.7912 - val\_dense\_30\_acc: 0.9375

Epoch 7/10

6400/6400 [==============================] - 103s 16ms/step - loss: 0.5302 - dense\_29\_loss: 0.3982 - dense\_30\_loss: 0.1319 - dense\_29\_acc: 0.8102 - dense\_30\_acc: 0.9503 - val\_loss: 0.6230 - val\_dense\_29\_loss: 0.4514 - val\_dense\_30\_loss: 0.1717 - val\_dense\_29\_acc: 0.7900 - val\_dense\_30\_acc: 0.9362

Epoch 8/10

6400/6400 [==============================] - 102s 16ms/step - loss: 0.5042 - dense\_29\_loss: 0.3821 - dense\_30\_loss: 0.1221 - dense\_29\_acc: 0.8183 - dense\_30\_acc: 0.9527 - val\_loss: 0.6285 - val\_dense\_29\_loss: 0.4674 - val\_dense\_30\_loss: 0.1611 - val\_dense\_29\_acc: 0.7912 - val\_dense\_30\_acc: 0.9356

Epoch 9/10

6400/6400 [==============================] - 104s 16ms/step - loss: 0.4893 - dense\_29\_loss: 0.3717 - dense\_30\_loss: 0.1176 - dense\_29\_acc: 0.8259 - dense\_30\_acc: 0.9548 - val\_loss: 0.6505 - val\_dense\_29\_loss: 0.4592 - val\_dense\_30\_loss: 0.1914 - val\_dense\_29\_acc: 0.7844 - val\_dense\_30\_acc: 0.9419

Epoch 10/10

6400/6400 [==============================] - 104s 16ms/step - loss: 0.4661 - dense\_29\_loss: 0.3576 - dense\_30\_loss: 0.1085 - dense\_29\_acc: 0.8342 - dense\_30\_acc: 0.9575 - val\_loss: 0.6432 - val\_dense\_29\_loss: 0.4616 - val\_dense\_30\_loss: 0.1816 - val\_dense\_29\_acc: 0.7856 - val\_dense\_30\_acc: 0.9344

MODEL\_BEST

Train on 6400 samples, validate on 1600 samples

Epoch 1/20

6400/6400 [==============================] - 268s 42ms/step - loss: 1.8266 - dense\_15\_loss: 0.8886 - dense\_16\_loss: 0.9380 - dense\_15\_acc: 0.4988 - dense\_16\_acc: 0.5009 - val\_loss: 1.5221 - val\_dense\_15\_loss: 0.7855 - val\_dense\_16\_loss: 0.7366 - val\_dense\_15\_acc: 0.4994 - val\_dense\_16\_acc: 0.5469

Epoch 2/20

6400/6400 [==============================] - 261s 41ms/step - loss: 1.4370 - dense\_15\_loss: 0.8547 - dense\_16\_loss: 0.5823 - dense\_15\_acc: 0.5155 - dense\_16\_acc: 0.7202 - val\_loss: 1.0372 - val\_dense\_15\_loss: 0.7162 - val\_dense\_16\_loss: 0.3210 - val\_dense\_15\_acc: 0.5506 - val\_dense\_16\_acc: 0.8813

Epoch 3/20

6400/6400 [==============================] - 289s 45ms/step - loss: 1.1672 - dense\_15\_loss: 0.8171 - dense\_16\_loss: 0.3501 - dense\_15\_acc: 0.5264 - dense\_16\_acc: 0.8612 - val\_loss: 0.9732 - val\_dense\_15\_loss: 0.7383 - val\_dense\_16\_loss: 0.2349 - val\_dense\_15\_acc: 0.5475 - val\_dense\_16\_acc: 0.9194

Epoch 4/20

6400/6400 [==============================] - 283s 44ms/step - loss: 1.0818 - dense\_15\_loss: 0.7782 - dense\_16\_loss: 0.3036 - dense\_15\_acc: 0.5534 - dense\_16\_acc: 0.8869 - val\_loss: 0.8750 - val\_dense\_15\_loss: 0.6516 - val\_dense\_16\_loss: 0.2234 - val\_dense\_15\_acc: 0.6144 - val\_dense\_16\_acc: 0.9169

Epoch 5/20

6400/6400 [==============================] - 293s 46ms/step - loss: 0.9602 - dense\_15\_loss: 0.6881 - dense\_16\_loss: 0.2721 - dense\_15\_acc: 0.6280 - dense\_16\_acc: 0.9006 - val\_loss: 0.7832 - val\_dense\_15\_loss: 0.5549 - val\_dense\_16\_loss: 0.2283 - val\_dense\_15\_acc: 0.7144 - val\_dense\_16\_acc: 0.9219

Epoch 6/20

6400/6400 [==============================] - 271s 42ms/step - loss: 0.8688 - dense\_15\_loss: 0.6154 - dense\_16\_loss: 0.2535 - dense\_15\_acc: 0.6844 - dense\_16\_acc: 0.9075 - val\_loss: 0.7380 - val\_dense\_15\_loss: 0.4966 - val\_dense\_16\_loss: 0.2414 - val\_dense\_15\_acc: 0.7613 - val\_dense\_16\_acc: 0.9112

Epoch 7/20

6400/6400 [==============================] - 271s 42ms/step - loss: 0.7896 - dense\_15\_loss: 0.5603 - dense\_16\_loss: 0.2293 - dense\_15\_acc: 0.7220 - dense\_16\_acc: 0.9130 - val\_loss: 0.6907 - val\_dense\_15\_loss: 0.4840 - val\_dense\_16\_loss: 0.2067 - val\_dense\_15\_acc: 0.7812 - val\_dense\_16\_acc: 0.9244

Epoch 8/20

6400/6400 [==============================] - 284s 44ms/step - loss: 0.7758 - dense\_15\_loss: 0.5497 - dense\_16\_loss: 0.2261 - dense\_15\_acc: 0.7328 - dense\_16\_acc: 0.9175 - val\_loss: 0.6773 - val\_dense\_15\_loss: 0.4792 - val\_dense\_16\_loss: 0.1981 - val\_dense\_15\_acc: 0.7794 - val\_dense\_16\_acc: 0.9269

Epoch 9/20

6400/6400 [==============================] - 293s 46ms/step - loss: 0.7216 - dense\_15\_loss: 0.5145 - dense\_16\_loss: 0.2072 - dense\_15\_acc: 0.7506 - dense\_16\_acc: 0.9261 - val\_loss: 0.6376 - val\_dense\_15\_loss: 0.4300 - val\_dense\_16\_loss: 0.2075 - val\_dense\_15\_acc: 0.7950 - val\_dense\_16\_acc: 0.9294

Epoch 10/20

6400/6400 [==============================] - 297s 46ms/step - loss: 0.7013 - dense\_15\_loss: 0.4875 - dense\_16\_loss: 0.2138 - dense\_15\_acc: 0.7681 - dense\_16\_acc: 0.9228 - val\_loss: 0.6132 - val\_dense\_15\_loss: 0.4034 - val\_dense\_16\_loss: 0.2098 - val\_dense\_15\_acc: 0.8138 - val\_dense\_16\_acc: 0.9250

Epoch 11/20

6400/6400 [==============================] - 281s 44ms/step - loss: 0.6342 - dense\_15\_loss: 0.4402 - dense\_16\_loss: 0.1939 - dense\_15\_acc: 0.8003 - dense\_16\_acc: 0.9289 - val\_loss: 0.5465 - val\_dense\_15\_loss: 0.3433 - val\_dense\_16\_loss: 0.2031 - val\_dense\_15\_acc: 0.8431 - val\_dense\_16\_acc: 0.9312

Epoch 12/20

6400/6400 [==============================] - 290s 45ms/step - loss: 0.4561 - dense\_15\_loss: 0.2707 - dense\_16\_loss: 0.1854 - dense\_15\_acc: 0.9098 - dense\_16\_acc: 0.9339 - val\_loss: 0.3496 - val\_dense\_15\_loss: 0.1781 - val\_dense\_16\_loss: 0.1715 - val\_dense\_15\_acc: 0.9431 - val\_dense\_16\_acc: 0.9375

Epoch 13/20

6400/6400 [==============================] - 295s 46ms/step - loss: 0.3643 - dense\_15\_loss: 0.1939 - dense\_16\_loss: 0.1704 - dense\_15\_acc: 0.9436 - dense\_16\_acc: 0.9386 - val\_loss: 0.3277 - val\_dense\_15\_loss: 0.1621 - val\_dense\_16\_loss: 0.1656 - val\_dense\_15\_acc: 0.9444 - val\_dense\_16\_acc: 0.9388

Epoch 14/20

6400/6400 [==============================] - 288s 45ms/step - loss: 0.3447 - dense\_15\_loss: 0.1823 - dense\_16\_loss: 0.1624 - dense\_15\_acc: 0.9445 - dense\_16\_acc: 0.9409 - val\_loss: 0.3482 - val\_dense\_15\_loss: 0.1902 - val\_dense\_16\_loss: 0.1579 - val\_dense\_15\_acc: 0.9413 - val\_dense\_16\_acc: 0.9388

Epoch 15/20

6400/6400 [==============================] - 287s 45ms/step - loss: 0.3147 - dense\_15\_loss: 0.1618 - dense\_16\_loss: 0.1529 - dense\_15\_acc: 0.9475 - dense\_16\_acc: 0.9425 - val\_loss: 0.3771 - val\_dense\_15\_loss: 0.2093 - val\_dense\_16\_loss: 0.1678 - val\_dense\_15\_acc: 0.9287 - val\_dense\_16\_acc: 0.9381

Epoch 16/20

6400/6400 [==============================] - 284s 44ms/step - loss: 0.2863 - dense\_15\_loss: 0.1479 - dense\_16\_loss: 0.1384 - dense\_15\_acc: 0.9530 - dense\_16\_acc: 0.9477 - val\_loss: 0.3538 - val\_dense\_15\_loss: 0.1898 - val\_dense\_16\_loss: 0.1640 - val\_dense\_15\_acc: 0.9381 - val\_dense\_16\_acc: 0.9369

Epoch 17/20

6400/6400 [==============================] - 268s 42ms/step - loss: 0.2740 - dense\_15\_loss: 0.1415 - dense\_16\_loss: 0.1325 - dense\_15\_acc: 0.9539 - dense\_16\_acc: 0.9531 - val\_loss: 0.3514 - val\_dense\_15\_loss: 0.1836 - val\_dense\_16\_loss: 0.1678 - val\_dense\_15\_acc: 0.9388 - val\_dense\_16\_acc: 0.9369

Epoch 18/20

6400/6400 [==============================] - 283s 44ms/step - loss: 0.2657 - dense\_15\_loss: 0.1343 - dense\_16\_loss: 0.1313 - dense\_15\_acc: 0.9558 - dense\_16\_acc: 0.9520 - val\_loss: 0.3398 - val\_dense\_15\_loss: 0.1722 - val\_dense\_16\_loss: 0.1676 - val\_dense\_15\_acc: 0.9438 - val\_dense\_16\_acc: 0.9406

Epoch 19/20

6400/6400 [==============================] - 290s 45ms/step - loss: 0.2430 - dense\_15\_loss: 0.1251 - dense\_16\_loss: 0.1178 - dense\_15\_acc: 0.9594 - dense\_16\_acc: 0.9566 - val\_loss: 0.3485 - val\_dense\_15\_loss: 0.1823 - val\_dense\_16\_loss: 0.1662 - val\_dense\_15\_acc: 0.9456 - val\_dense\_16\_acc: 0.9419

Epoch 20/20

6400/6400 [==============================] - 272s 42ms/step - loss: 0.2418 - dense\_15\_loss: 0.1240 - dense\_16\_loss: 0.1178 - dense\_15\_acc: 0.9586 - dense\_16\_acc: 0.9564 - val\_loss: 0.3588 - val\_dense\_15\_loss: 0.1901 - val\_dense\_16\_loss: 0.1687 - val\_dense\_15\_acc: 0.9431 - val\_dense\_16\_acc: 0.9438