

Layer Name	Borzoi (1 replicate)	Flashzoi (1 replicate)
DNA convolution	31,232	31,232
Convolutional tower	1,558,112	1,558,112
	2,239,392	2,239,392
	3,299,648	3,299,648
	4,733,728	4,733,728
	6,761,792	6,761,792
	9,834,496	9,834,496
Unet skip connection 1	1,967,616	1,967,616
	2,560	2,560
Unet skip connection 2	2,360,832	2,360,832
	3,072	3,072
Transformer tower	15,758,336	16,530,432
	15,758,336	16,530,432
	15,758,336	16,530,432
	15,758,336	16,530,432
	15,758,336	16,530,432
	15,758,336	16,530,432
	15,758,336	16,530,432
	15,758,336	16,530,432
Upsampling layer 1	2,363,904	2,363,904
	2,365,440	2,365,440
Upsampling layer 2	2,363,904	2,363,904
	2,365,440	2,365,440
Joined pointwise convolutions	2,954,112	2,954,112
Human head	14,620,731	14,620,731
Mouse head	5,009,968	5,009,968
Total Trainable Parameters	190,902,667	197,079,435

Supplementary Table S1. Parameter count of the Borzoi and Flashzoi models.