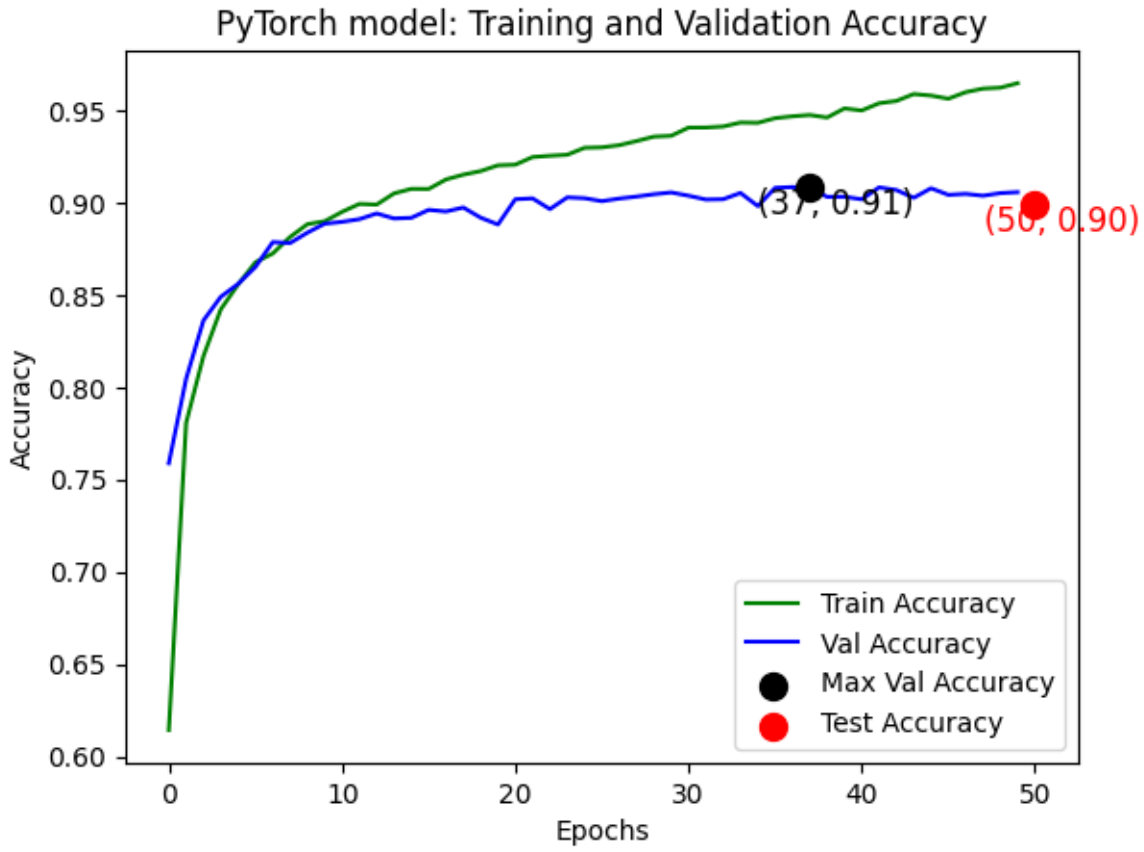
This document provides the most detailed and representative execution of the custom LeNet-5 architecture across various standalone frameworks analyzed in this project (PyTorch, TensorFlow, JAX), as well as on the Keras 3 framework, using the same backends.

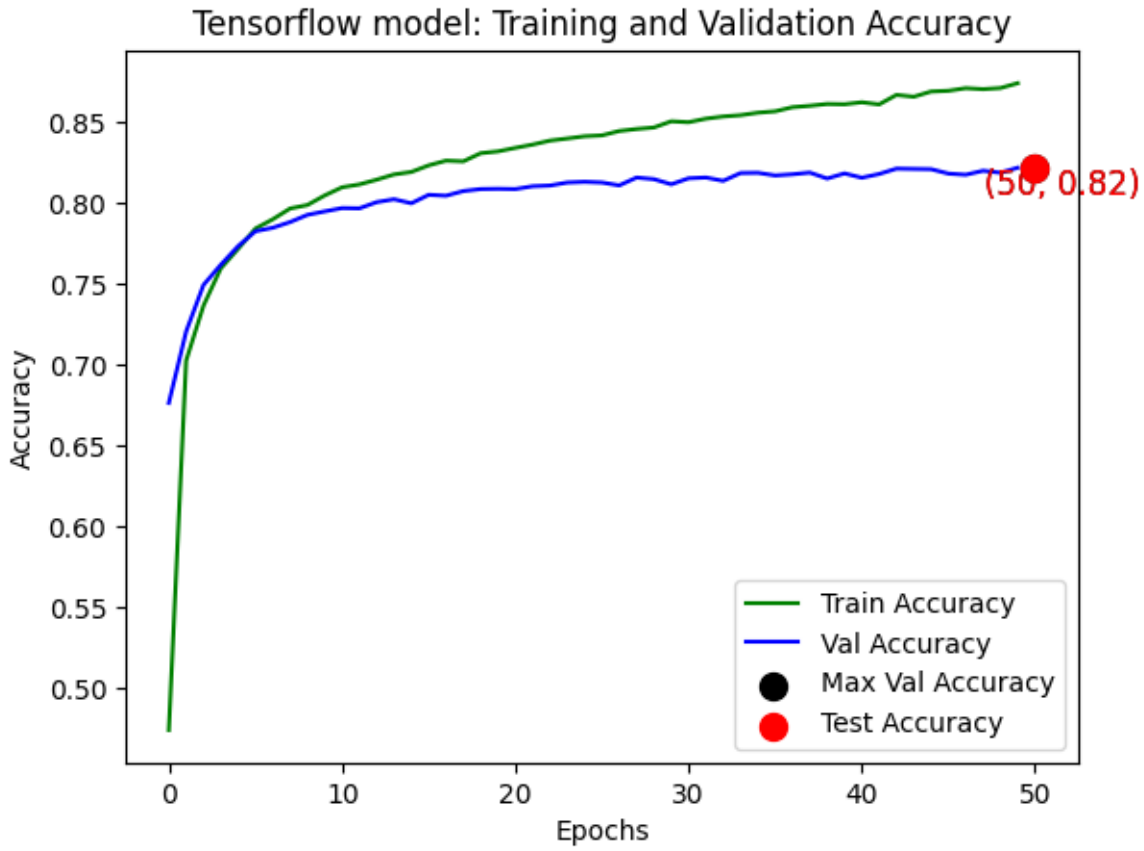
PyTorch model

train batch size:	1024
number of epochs:	50
learning rate:	0.005
validation split:	0.2
total training time:	32.664
test accuracy:	0.899
test loss:	0.383229



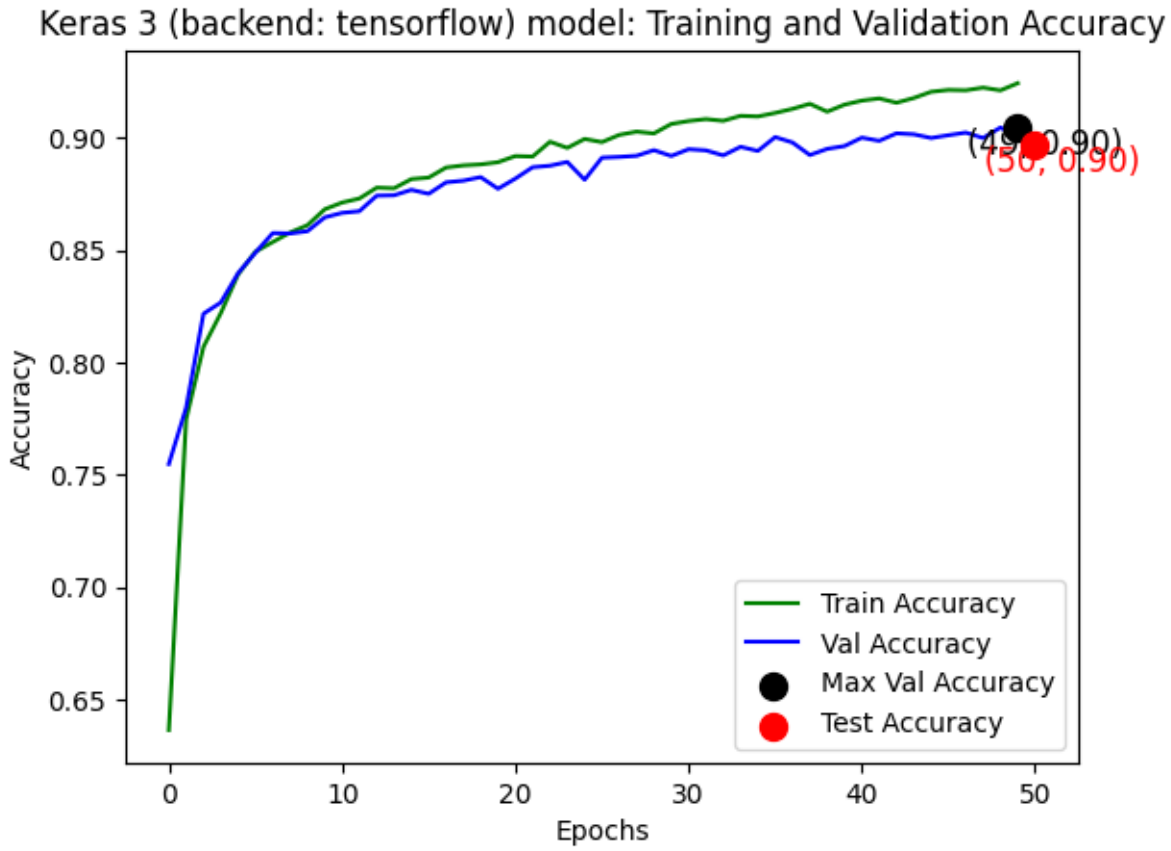
Tensorflow model

train batch size:	1024
number of epochs:	50
learning rate:	0.005
validation split:	0.2
total training time:	24.032
test accuracy:	0.821
test loss:	6.822012



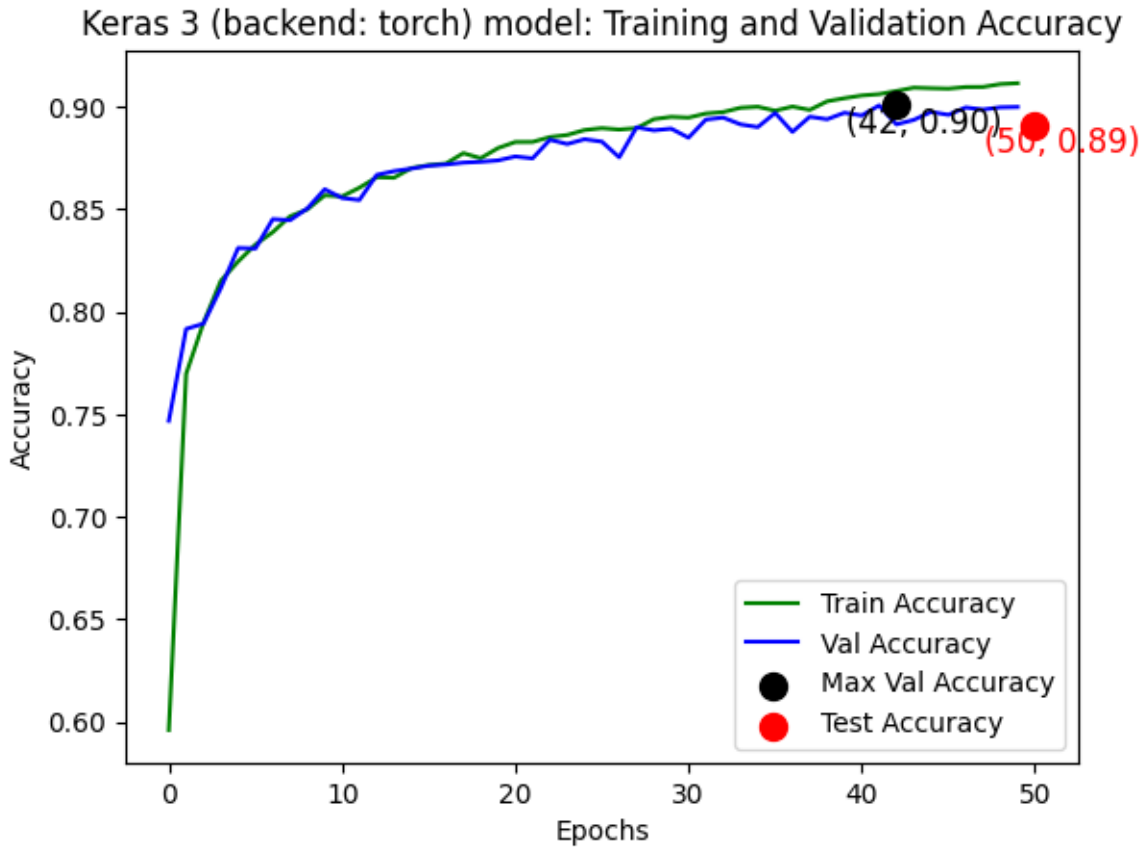
Keras 3 (backend: tensorflow) model

train batch size:	1024
number of epochs:	50
learning rate:	0.005
validation split:	0.2
total training time:	29.191
test accuracy:	0.897
test loss:	0.292856



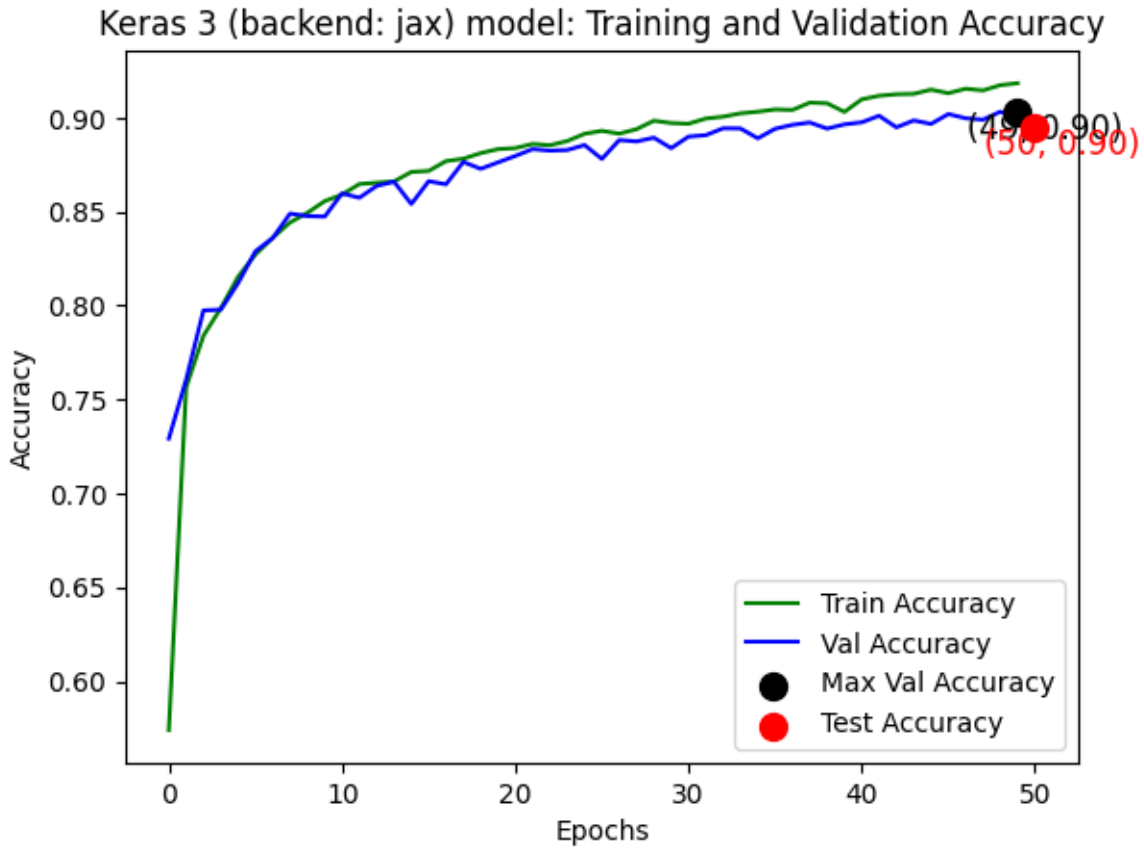
Keras 3 (backend: torch) model

train batch size:	1024
number of epochs:	50
learning rate:	0.005
validation split:	0.2
total training time:	56.399
test accuracy:	0.891
test loss:	0.309899



Keras 3 (backend: jax) model

train batch size:	1024
number of epochs:	50
learning rate:	0.005
validation split:	0.2
total training time:	26.574
test accuracy:	0.895
test loss:	0.300816



JAX model

train batch size:	1024
number of epochs:	50
learning rate:	0.005
validation split:	0.2
total training time:	21.732
test accuracy:	0.897
test loss:	0.399337