SOFTWARE ENGINEERING PROGRAMME
UNIVERSITY OF OXFORD
www.softeng.ox.ac.uk

ASSESSMENT

Student: Nicholas Drake

Course: Deep Neural Networks

Date: 13th March 2023

Grade: 82

Ronald Clark June 20, 2023

REPORT

Summary: Your work is of an exceptional standard and could serve as a model answer. You answers show an impressive depth and clarity in both explanation and presentation.

Question 1

1a - c are all correct.

Question 2

Your answer uses a sophisticated model choice (EfficientNet). It demonstrates careful selection of various optimizers and regularization strategies. The clarity in explaining the design decisions is excellent. The performance of your model on the test set is outstanding, achieving an accuracy of 88.18% (although this is with pretrained ImageNet weights).

Question 3

Your response includes a comprehensive diagram detailing the differences. Your explanations are good and cover all key similarities and differences.

Question 4

Your answer is accurate and complete.

Question 5

5a. Your response is excellent and directly addresses the issue with the square root derivative.
5b. Your response presents a good solution involving the addition of an epsilon term to the gradient to prevent a division by zero error.

Question 6

6a. Your answer is not entirely correct. If there are 4 false positives, then all the positive cases would have to be true.
6b. Your response provided is correct.
6c. Your explanation regarding the suitability of the model for the applica-

tion is insightful and informative.

Question 7
7a. Your plot is clear and correct.
7b. Your response correctly points out that the loss function helps to attenuate outliers, and makes a relevant connection to focal loss to prevent overfitting.