

SCHOOL OF ENGINEERING SCIENCE MULTIMEDIA LABORATORY

DFTS Version 2: User Documentation

TR-ML-2020-???

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Contents

Ta	able of Contents	i
List of Figures		ii
Li	st of Abbreviations	iii
1	Introduction	1
	1.1 What can DFTS version 2 do?	1
	1.2 Overview of this document	1
2	Validation results	2
3	Key modules in DFTS	3
Bi	ibliography	4

List of Figures

ii

List of Abbreviations

 $\mathbf{DFTS}\:$ Deep Feature Transmission Simulator. 1

 ${\bf SFU}$ Simon Fraser University. 1



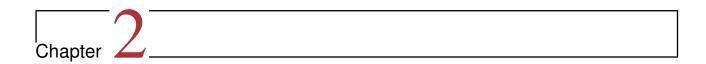
Introduction

This technical report serves as user documentation for DFTS version 2. The original DFTS was developed by Harshavardhan Unnibhavi, an intern at SFU's Multimedia Lab in 2018 with the objective of studying packet-based transmission of deep features over unreliable communication channels [1]. Version 1 of DFTS (along with a test set consisting of 867 images from 10 classes of *Imagenet*) can be cloned from the public repository at https://github.com/SFU-Multimedia-Lab/DFTS. A number of higher-level API calls in *TensorFlow* version 2 break the operation of DFTS version 1. The motivation for upgrading DFTS was to gain compatibility with *TensorFlow* version 2.

1.1 What can DFTS version 2 do?

1.2 Overview of this document

- Chapter 2 discusses validation tests to verify that DFTS version 2 produces matching results to the original version.
- Chapter 3 explains in full detail the operation of the key modules in DFTS.



Validation results

 $https://github.com/AshivDhondea/DFTS_compat_v1$

Chapter 3

Key modules in DFTS

Bibliography

[1] H. Unnibhavi, H. Choi, S. R. Alvar, and I. V. Bajić, "Dfts: Deep feature transmission simulator," 2018. [1]