



US 20220376703A1

(19) **United States**

(12) **Patent Application Publication**
Pope

(10) **Pub. No.: US 2022/0376703 A1**

(43) **Pub. Date: Nov. 24, 2022**

(54) **COMPRESSION AND DECOMPRESSION IN
HARDWARE FOR DATA PROCESSING**

(52) **U.S. CL.**

CPC *H03M 7/42* (2013.01); *H03M 7/6011*
(2013.01); *H03M 7/005* (2013.01)

(71) Applicant: **Google LLC**, Mountain View, CA (US)

(57)

ABSTRACT

(72) Inventor: **Reiner Alwyn Pope**, Sunnyvale, CA
(US)

Methods, systems, and apparatus, including computer-readable storage media for hardware compression and decompression. A system can include a decompressor device coupled to a memory device and a processor. The decompressor device can be configured to receive, from the memory device, compressed data that has been compressed using an entropy encoding, process the compressed data using the entropy encoding to generate uncompressed data, and send the uncompressed data to the processor. The system can also include a compressor device configured to generate, from uncompressed data, a probability distribution of codewords, generate a code table from the probability distribution, and compress incoming data using the generated code table.

(21) Appl. No.: **17/328,452**

(22) Filed: **May 24, 2021**

Publication Classification

(51) **Int. CL.**

H03M 7/42 (2006.01)

H03M 7/30 (2006.01)

H03M 7/00 (2006.01)

