ACCESSING DATA IN MULTI-DIMENSIONAL TENSORS

ABSTRACT

Methods, systems, and apparatus, including an apparatus for processing an instruction for accessing a *N*-dimensional tensor, the apparatus including multiple tensor index elements and multiple dimension multiplier elements, where each of the dimension multiplier elements has a corresponding tensor index element. The apparatus includes one or more processors configured to obtain an instruction to access a particular element of a *N*-dimensional tensor, where the *N*-dimensional tensor has multiple elements arranged across each of the *N* dimensions, and where *N* is an integer that is equal to or greater than one; determine, using one or more tensor index elements of the multiple tensor index elements and one or more dimension multiplier elements of the multiple dimension multiplier elements, an address of the particular element; and output data indicating the determined address for accessing the particular element of the *N*-dimensional tensor.