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(71) Applicant: **INTERDIGITAL VC HOLDINGS, INC.**

[US/US]: 200 Bellevue Parkway, Suite 300, Wilmington, Delaware 19809 (US).

(72) Inventors: **LODHI, Muhammad, Asad**; 111 West 33rd

Street, Suite 1420, New York, New York 10120 (US).

PANG, Jiahao; 111 West 33rd Street, Suite 1420, New

York, New York 10120 (US). **TIAN, Dong**; 111 West 33rd

Street, Suite 1420, New York, New York 10120 (US).

(74) Agent: **SCHMID, Joshua, D.**; Volpe Koenig, 30 S. 17th

Street, Suite 1800, Philadelphia, Pennsylvania 19103 (US).

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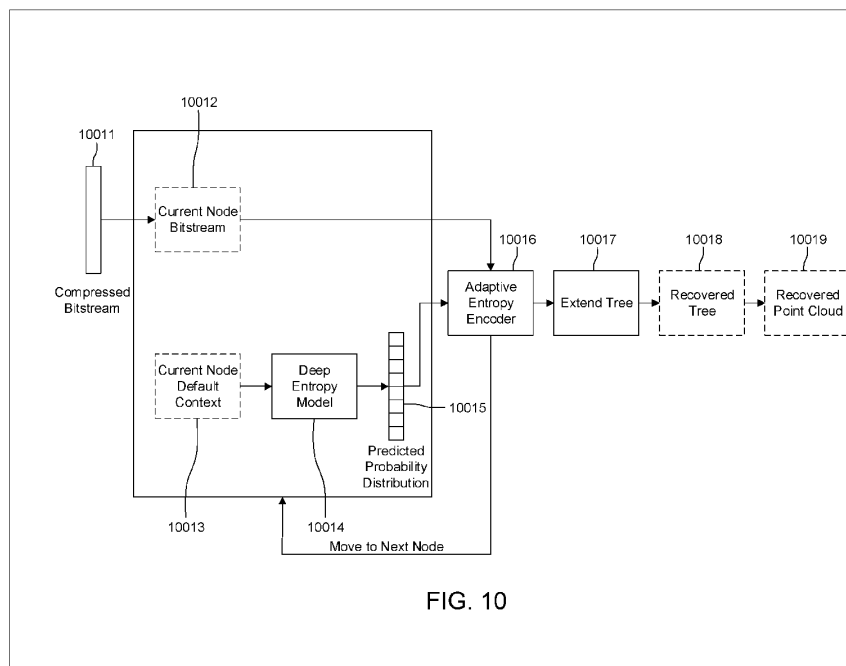


FIG. 10

(57) **Abstract:** Methods and apparatuses for decoding and encoding point cloud data are described herein. A method may include accessing point cloud data compressed based on a tree structure. The method may further comprise fetching points in a neighborhood associated with a current node of the tree structure, and computing a feature using a point-based neural network module, based on three-dimensional (3D) locations of the fetched points. The method may include predicting, using a neural network module, an occupancy symbol distribution for the current node based on the feature, and determining the occupancy for the current node from the encoded bitstream and the predicted occupancy symbol distribution. The method may include computing another feature using a convolution-based neural network module, based on a voxelized version of the fetched points, and fusing the feature and the another feature with one or more known features of a current node to compose a comprehensive feature.

[Continued on next page]

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