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- (71) 申请人: 京东科技信息技术有限公司 (JINGDONG TECHNOLOGY INFORMATION TECHNOLOGY CO., LTD.) [CN/CN]; 中国北京市大兴区北京经济技术开发区科创十一街18号院2号楼6层601, Beijing 100176 (CN)。
- (72) 发明人: 赵杉杉 (ZHAO, Shanshan); 中国北京市大兴区北京经济技术开发区科创十一街18号院2号楼6层601, Beijing 100176 (CN)。段伦豪 (DUAN, Lunhao); 中国北京市大兴区北京

经济技术开发区科创十一街18号院2号楼6层601, Beijing 100176 (CN)。

- (74) 代理人: 中国贸促会专利商标事务所有限公司 (CCPIT PATENT AND TRADEMARK LAW OFFICE); 中国北京市西城区复兴门内大街158号远洋大厦F10层, Beijing 100031 (CN)。
- (81) 指定国(除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW。
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(54) Title: THREE-DIMENSIONAL POINT CLOUD PROCESSING MODEL TRAINING METHOD AND SEMANTIC SEGMENTATION MODEL TRAINING METHOD, AND RELATED DEVICE

(54) 发明名称: 三维点云处理模型和语义分割模型的训练方法和相关设备

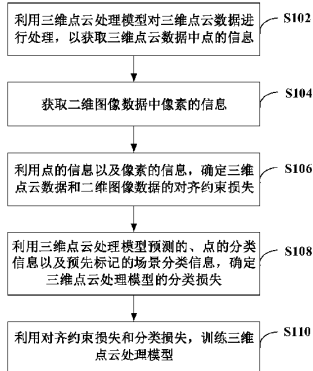


图 1

- S102 Process three-dimensional point cloud data by using a three-dimensional point cloud processing model, so as to acquire information of points in the three-dimensional point cloud data
- S104 Acquire information of pixels in two-dimensional image data
- S106 Determine an alignment constraint loss of the three-dimensional point cloud data and the two-dimensional image data by using the information of the points and the information of the pixels
- S108 Determine a classification loss of the three-dimensional point cloud processing model by using classification information, which is predicted by the three-dimensional point cloud processing model, of the points and pre-marked scene classification information
- S110 Train the three-dimensional point cloud processing model by using the alignment constraint loss and the classification loss

(57) Abstract: The present disclosure relates to the technical field of three-dimensional point cloud. Disclosed are a three-dimensional point cloud processing model training method and a semantic segmentation model training method, and a related device. The three-dimensional point cloud processing model training method comprises: processing three-dimensional point cloud data by using a three-dimensional point cloud processing model, so as to acquire information of points in the three-dimensional point cloud data; acquiring information of pixels in two-dimensional image data, wherein the two-dimensional image data and the three-dimensional point cloud data cover the same area; determining an alignment constraint loss of the three-dimensional point cloud data and the two-dimensional image data by using the information of the points and the information of the pixels; determining a classification loss of the three-dimensional point cloud processing model by using classification information, which is predicted by the three-dimensional point cloud processing model, of the points in the three-dimensional point cloud data and pre-marked scene classification information; and training the three-dimensional point cloud processing model by using the alignment constraint loss and the classification

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本国际公布：
— 包括国际检索报告(条约第21条(3))。

loss.

(57) 摘要：本公开公开了一种三维点云处理模型和语义分割模型的训练方法和相关设备，涉及三维点云技术领域。三维点云处理模型的训练方法包括：利用三维点云处理模型对三维点云数据进行处理，以获取三维点云数据中点的信息；获取二维图像数据中像素的信息，其中，二维图像数据和三维点云数据覆盖相同的区域；利用点的信息以及像素的信息，确定三维点云数据和二维图像数据的对齐约束损失；利用三维点云处理模型预测的、三维点云数据中点的分类信息以及预先标记的场景分类信息，确定三维点云处理模型的分类损失；利用对齐约束损失和分类损失，训练三维点云处理模型。