

(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织
国际局



(10) 国际公布号
WO 2024/228666 A1

(43) 国际公布日
2024 年 11 月 7 日 (07.11.2024)

- (51) 国际专利分类号:
G06N 3/02 (2006.01) *G06F 40/00* (2020.01)
G06N 20/00 (2019.01) *G06F 16/35* (2019.01)
- (21) 国际申请号: PCT/SG2024/050244
- (22) 国际申请日: 2024 年 4 月 9 日 (09.04.2024)
- (25) 申请语言: 中文
- (26) 公布语言: 中文
- (30) 优先权:
202310459343.3 2023年4月23日 (23.04.2023) CN
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(54) Title: TEXT PREDICTION MODEL TRAINING METHOD AND DEVICE, AND TEXT PREDICTION METHOD AND DEVICE

(54) 发明名称: 训练文本预测模型的方法、文本预测方法及装置

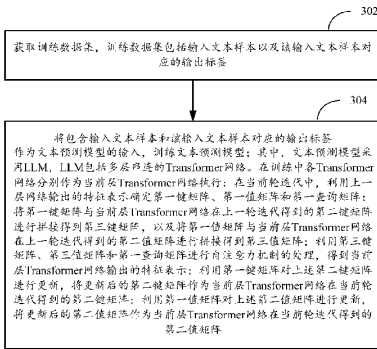


图 3

- 302 Acquire a training data set, the training data set comprising an input text sample and an output label corresponding to the input text sample
- 304 Use a text sequence comprising the input text sample as input of a text prediction model to train the text prediction model, wherein the text prediction model uses an LLM, and the LLM comprises a plurality of layers of Transformer networks that are connected in series; during training, each Transformer network is separately implemented as a current layer of Transformer network: in a current round of iteration, a feature representation outputted by a previous layer of network is used to determine a first key matrix, a first value matrix, and a first query matrix; the first key matrix is concatenated with a second key matrix obtained by the current layer of Transformer network in a previous round of iteration so as to obtain a third key matrix, and the first value matrix is concatenated with a second value matrix obtained by the current layer of Transformer network in the previous round of iteration so as to obtain a third value matrix; the third key matrix, the third value matrix, and the first query matrix are used to perform self-attention mechanism processing so as to obtain the feature representation outputted by the current layer of Transformer network; the first key matrix is used to update the second key matrix, and an updated second key matrix is used as a second key matrix obtained by the current layer of Transformer network in the current round of iteration; and the first value matrix is used to update the second value matrix, and an updated second value matrix is used as a second value matrix obtained by the current layer of Transformer network in the current round of iteration

(57) Abstract: Disclosed in the embodiments of the present disclosure are a text prediction model training method and device, and a text prediction method and device. According to the present disclosure, a training sample set is used for training a large language model (LLM) to obtain a text prediction model. In this mode, labeled samples are substantively used for training the LLM, and in the updating process of a second key matrix and a second value matrix, a second key matrix and a second value matrix obtained by means of a previous round of iteration and a first key matrix and a first value matrix generated by a current input feature matrix are used, so that historical information and information of a current input text are both kept, and the LLM can fully understand and learn the labeled samples, thereby improving an LLM-based text prediction effect in an in-context learning scenario. In addition, the mode of forward optimizing a model greatly reduces model parameters needing to be updated, reduces costs of model training, and improves the efficiency.

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本国际公布:
— 包括国际检索报告(条约第21条(3))。

(57) 摘要: 本公开实施例公开了一种训练文本预测模型的方法、文本预测方法及装置。本公开利用训练样本集对大型语言模型进行训练来得到文本预测模型, 这种方式实质上利用了已标注的样本训练大型语言模型(LLM), 在第二键矩阵和第二值矩阵的更新过程中, 利用了上一轮迭代得到的第二键矩阵和第二值矩阵与当前输入特征矩阵产生的第一键矩阵和第一值矩阵, 既保留了历史信息又保持了当前输入文本的信息, 使得大型语言模型能够充分对已标注的样本进行理解和学习, 从而提高情景学习场景下基于大型语言模型的文本预测效果。并且这种前向优化模型的方式, 大大缩减了需要更新的模型参数, 降低了模型训练的成本, 提高了效率。