后, 我们通过语义一致性变换实验, 验证了数据泄露问题影响了神经程序修复系统的鲁棒性; 最后, 我们提出了一个数据收集、过滤和划分策略, 并在此基础上构建了一个纯净的数据集, 并在 Clean4J_Benchmark 数据集上重新训练了神经程序修复模型, 验证了我们制定的数据收集、过滤和划分策略的有效性.

数据泄露问题对于神经程序修复系统的重要性不言而喻, 因此有必要对神经程序修复系统中的数据泄露问题继续进行研究. 后续研究可以从以下 3 个方面开展: 首先, 本文并未对基于大语言模型(参数量超过 10 亿)的神经程序修复系统进行研究, 由于大语言模型的训练数据十分庞大, 对于其数据泄露的定义以及检测都具有挑战性, 研究人员可以在这个场景下对神经程序修复系统的数据泄露问题继续研究, 并且设计更加完备的过滤策略以及收集更多数据, 构建一个更为大型的神经程序修复系统数据集, 供基于大语言模型的神经程序修复系统进行训练或微调; 其次, 研究人员可以对神经程序修复系统常用的基准测试集进行系统的实证研究, 并在此基础上设计一个与现有的神经程序修复系统训练数据没有重叠的基准测试, 保证该基准测试的纯净, 这样可以避免数据泄露、保证在该基准测试上进行评估的公平性; 最后, 研究人员可以继续深入研究数据泄露会对神经程序修复系统造成哪些负面影响, 并设法消除这些影响.

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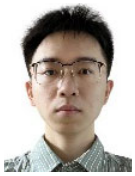
李卿源(2000－), 男, 硕士生, CCF 学生会员, 主要研究领域为软件工程, 自然语言处理.



钟文康(1997－), 男, 博士生, 主要研究领域为软件工程, 自然语言处理, 程序自动修复.

李传艺(1991－), 男, 博士, 准聘助理教授, 博士生导师, CCF 专业会员, 主要研究领域为软件工程, 业务过程管理, 自然语言处理.

葛季栋(1978－), 男, 博士, 副教授, 博士生导师, CCF 高级会员, 主要研究领域为自然语言处理, 智能软件工程, 分布式计算, 边缘计算, 服务计算, 业务过程管理.

骆斌(1967－), 男, 博士, 教授, 博士生导师, CCF 杰出会员, 主要研究领域为分布式计算, 边缘计算, 自然语言处理, 智能软件工程.