

TESTIMONIAL

推荐信

I am delighted to offer this letter in strong support of Yiwei Liu's application to your graduate program. As the Project Supervisor at Siemens Industrial Automation Products (Chengdu) Co., Ltd., my evaluation is based on my work collaborating Yiwei and feedback from colleagues at other Siemens China branches. I first met Yiwei Liu in January 2024 when he was an undergraduate student majoring in Software Engineering. He proactively contacted me, expressing interest in the internship opportunity we had announced.

His mission was to integrate a large language model (LLM) with robots using Siemens' proprietary low-code platform, enabling the LLM to drive the robots to execute corresponding commands issued by users.

Yiwei Liu led the development of a multimodal framework, which used the YOLOv7 model for object detection and classification of workpieces, embedding information about the objects and voice commands from clients into prompts. These were then fed into an external LLM, converting the LLM's output into executable Standard Operation Procedures (SOPs). This aligns with cutting-edge research in embodied intelligence, exploring its application in industrial production scenarios. It suggests a promising future for intelligent industrial assembly lines, as traditional robots can only perform a limited set of specific actions without autonomous thinking capabilities. We believe this work is exciting.

In this project, which spanned across China, Yiwei Liu closely communicated with other Siemens research institutes, such as Siemens Suzhou, to clarify project requirements and make technical decisions.

Sincerely
Tang Anhua

我很高兴为刘益伟的研究生申请提供这封强有力的推荐信。作为西门子工业自动化产品（成都）有限公司的项目主管，我的评价基于我与刘益伟的合作工作以及来自其他西门子中国分支机构同事的反馈。我第一次见到刘益伟是在 2024 年 1 月，当时他还是一名软件工程专业的本科生。他主动联系我，表达了对我们招聘实习机会的兴趣。

他的任务是使用西门子专有的低代码平台 **Workflow Canvas**，将大型语言模型（LLM）与机器人集成，使 LLM 能够驱动机器人执行用户发布的相应命令。

刘益伟领导开发了一个多模态框架，该框架使用 YOLOv7 模型进行工件的目标检测和分类，将对象信息和客户的语音命令嵌入提示中。这些提示然后被输入到外部大型语言模型中，将 LLM 的输出转换为可执行的标准操作程序（SOPs）。这与工业生产场景中的具身智能研究前沿一致，表明了智能工业装配线的光明前景，因为传统机器人只能执行有限的特定动作，而不具备自主思考能力。我们相信这一工作是令人振奋的。

在这个跨越中国大陆的项目中，刘益伟与来自其他地区的西门子研究所（例如苏州西门子）紧密沟通，明确了项目的需求以及技术选型。

此致
唐安华

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