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## Building an AI-Powered Intelligent Campus Assistant with DeepSeek-R1

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**Introduction.** DeepSeek-R1 is a powerful reasoning model aimed at creating specialized AI systems for specific domains. The first-generation model, DeepSeek-R1-Zero, uses large-scale reinforcement learning (RL) without supervised fine-tuning, demonstrating strong reasoning capabilities but facing challenges like readability and language mixing [1]. To improve these aspects, DeepSeek-R1 introduces multi-stage training and cold-start data before RL, enhancing performance in reasoning tasks to levels comparable with leading models like OpenAI's GPT-3. DeepSeek-R1, along with its predecessor DeepSeek-R1-Zero and six distilled models, is open-sourced to support the development of tailored AI solutions. This initiative provides a solid foundation for building efficient, domain-specific AI models for a range of applications.

**The main part.** DeepSeek-R1 can be used to build an intelligent campus assistant aimed at providing efficient and personalized campus information services for university students and staff [2]. With its deep reasoning and natural language processing capabilities, DeepSeek-R1 can answer various campus-related questions from students and faculty, such as course schedules, academic resources, campus activities, and administrative processes, offering real-time assistance. The assistant will tailor learning recommendations, course guidance, and event participation suggestions based on the personalized needs and academic backgrounds of students.

In addition to daily information services, DeepSeek-R1 will also enhance the teaching process. Through simulated experiments and in-depth research, DeepSeek-R1 supports code generation, optimization of debugging, and improves the learning experience and teaching effectiveness through interaction with teachers and students.

This application scenario of the intelligent campus assistant leverages DeepSeek-R1's outstanding performance in reasoning tasks, providing an intelligent, efficient, and interactive service platform for students and staff on campus, driving the innovation of teaching and learning methods.

**Conclusions.** The application of DeepSeek-R1 in an intelligent campus assistant shows promising results in enhancing personalized services, supporting teaching processes, and improving campus interactions. Its integration can significantly transform the way information is managed and accessed, driving innovation in education.

**List of sources used**:

1. Wenfeng Liang [et al]. DeepSeek-R1: Incentivizing Reasoning Capability in LLMs via Reinforcement Learning [Electronic resource]. URL: https://doi.org/10.48550/arXiv.2501.12948 (date of treatment: 02.02.2025)
2. Kotsis, K. T. ChatGPT and DeepSeek Evaluate One Another for Science Education. // Journal of Effective Teaching Methods. – 2025. – Vol. 3. Iss. 1. – pp. 1-5.