



ArgVantage: the New Pedagogical System to Learn Argumentation

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Overview

Context

- Computational models for argumentation assist users in improving their critical thinking skills.
- However, these models provide either *Detailed*, *Visual*, *Interactive*, or *Personalized* (DVIP) feedback.

Challenge

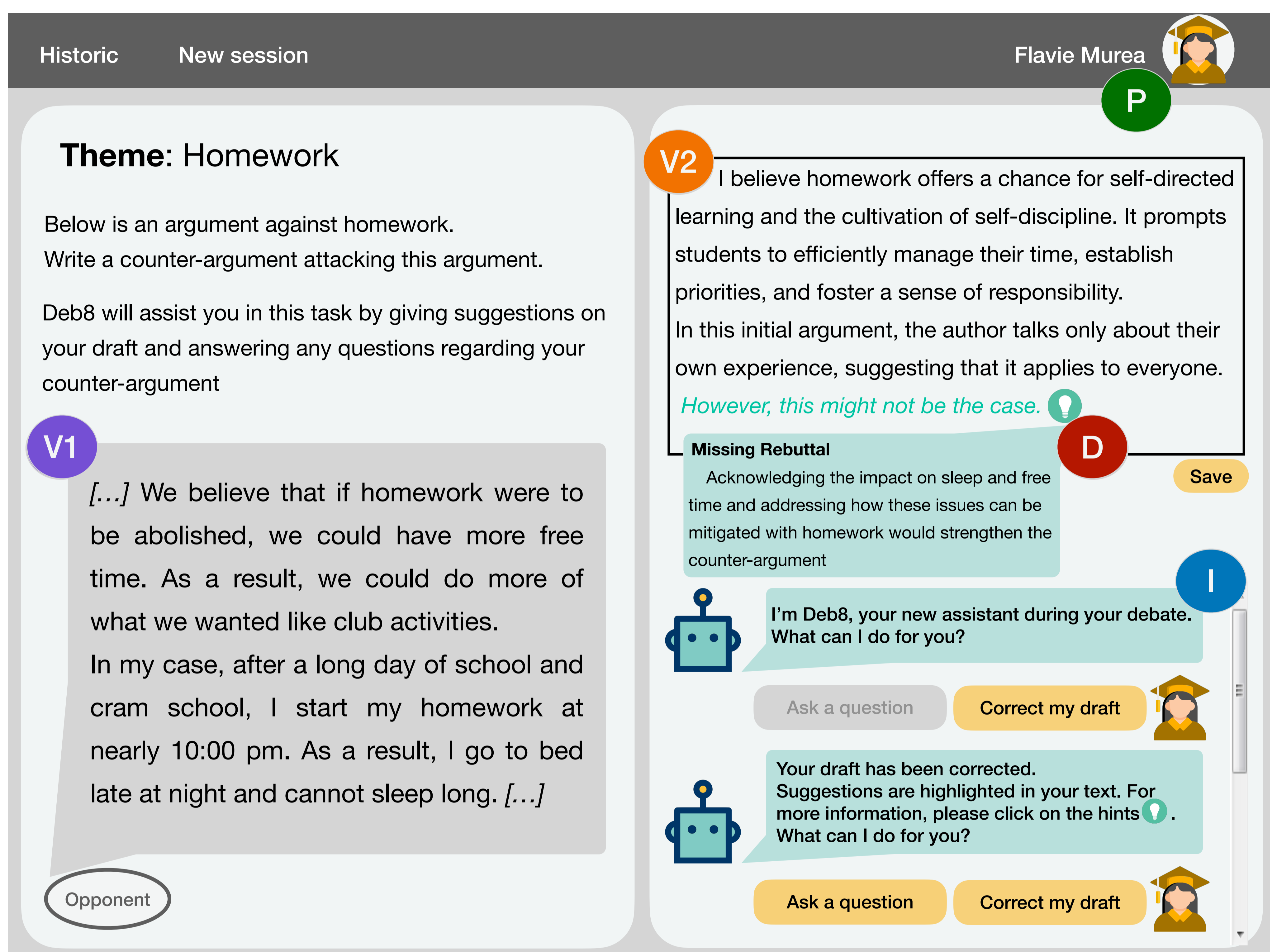
- Can we design a DVIP-compliant system that has the potential to improve users' argumentative skills?

Contribution

- Design and prototype an end-to-end DVIP system.

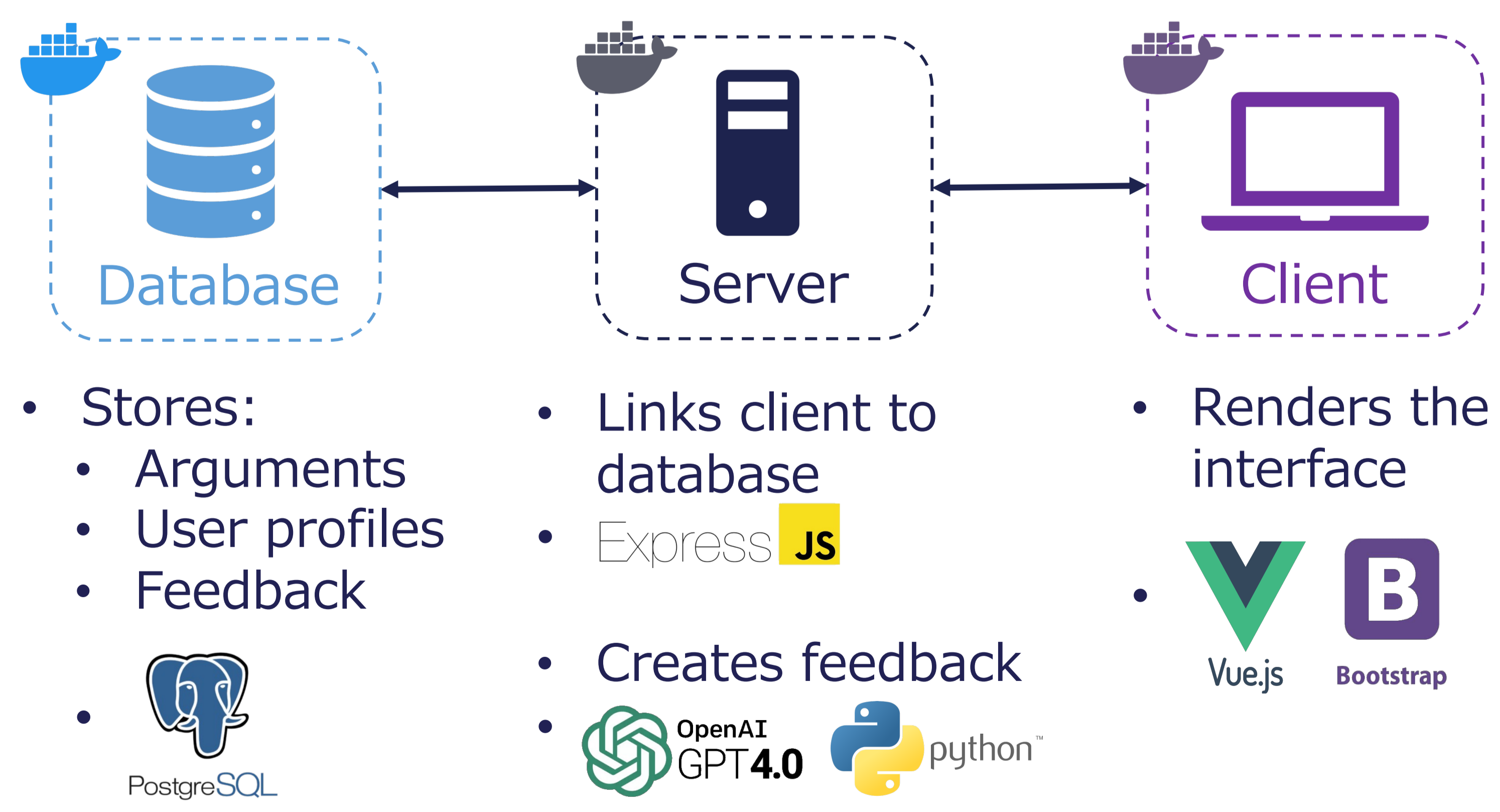
A Detailed Visual Interactive and Personalized System

- V1** User task instructions
- V2** Text editor to write a counter-argument
- D** Feedback to improve the counter-argument
- I** Interaction with a bot to ask for feedback
- P** User's profile and historical



* Image with real input/output

Architecture



- 😊: Clean, reliable, secure, easily adaptable
- 😞: Dependent on OpenAI (Maintenance + financial cost) Slow

Future work

Evaluation

- Measure the effects of DVIP dimensions on students.

Challenges

- Metrics choice
- Potential codependency:
 - Between the DVIP dimensions
 - Between variables: *textual* (LLM output) and *visual* feedback (Interface)

Feedback Generation

- Integrate open-source LLMs to optimize speed, maintenance, and financial cost.

Challenge

- Choice of LLMs: Balance between computational resources and efficiency

