automaTA: Human-Machine Interaction for Answering Context-Specific Questions

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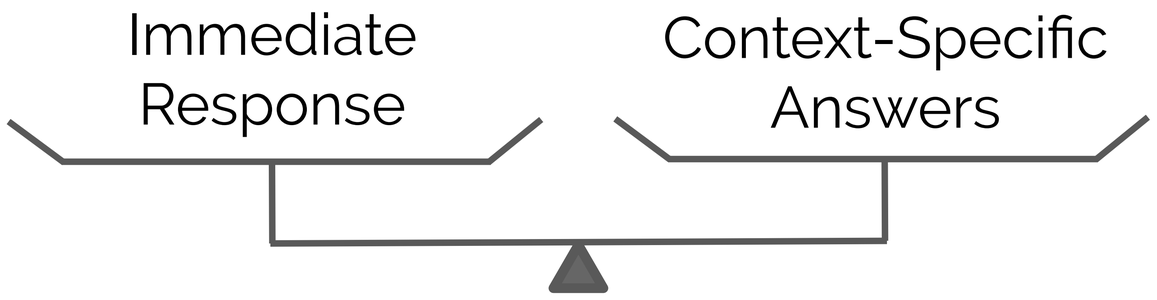
Please visit bit.ly/automa-ta

Motivation

In online education,
speed and specificity trade off needs to be balanced.

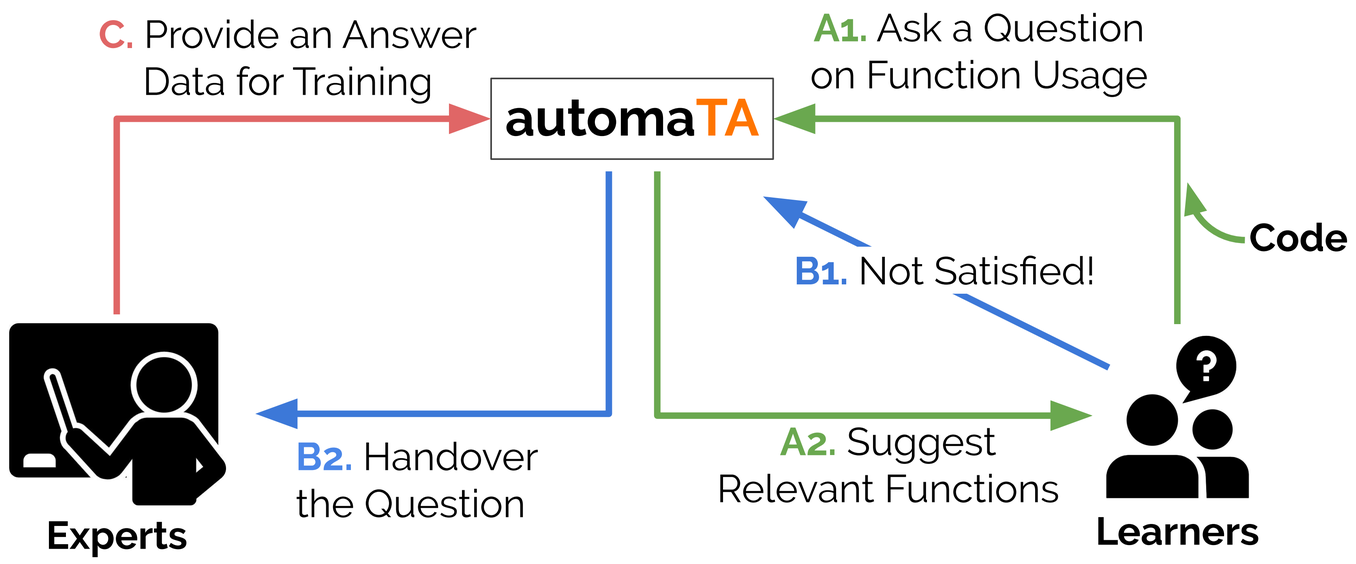


Research Question

How can we suggest context-specific answers to online learners' questions quickly?

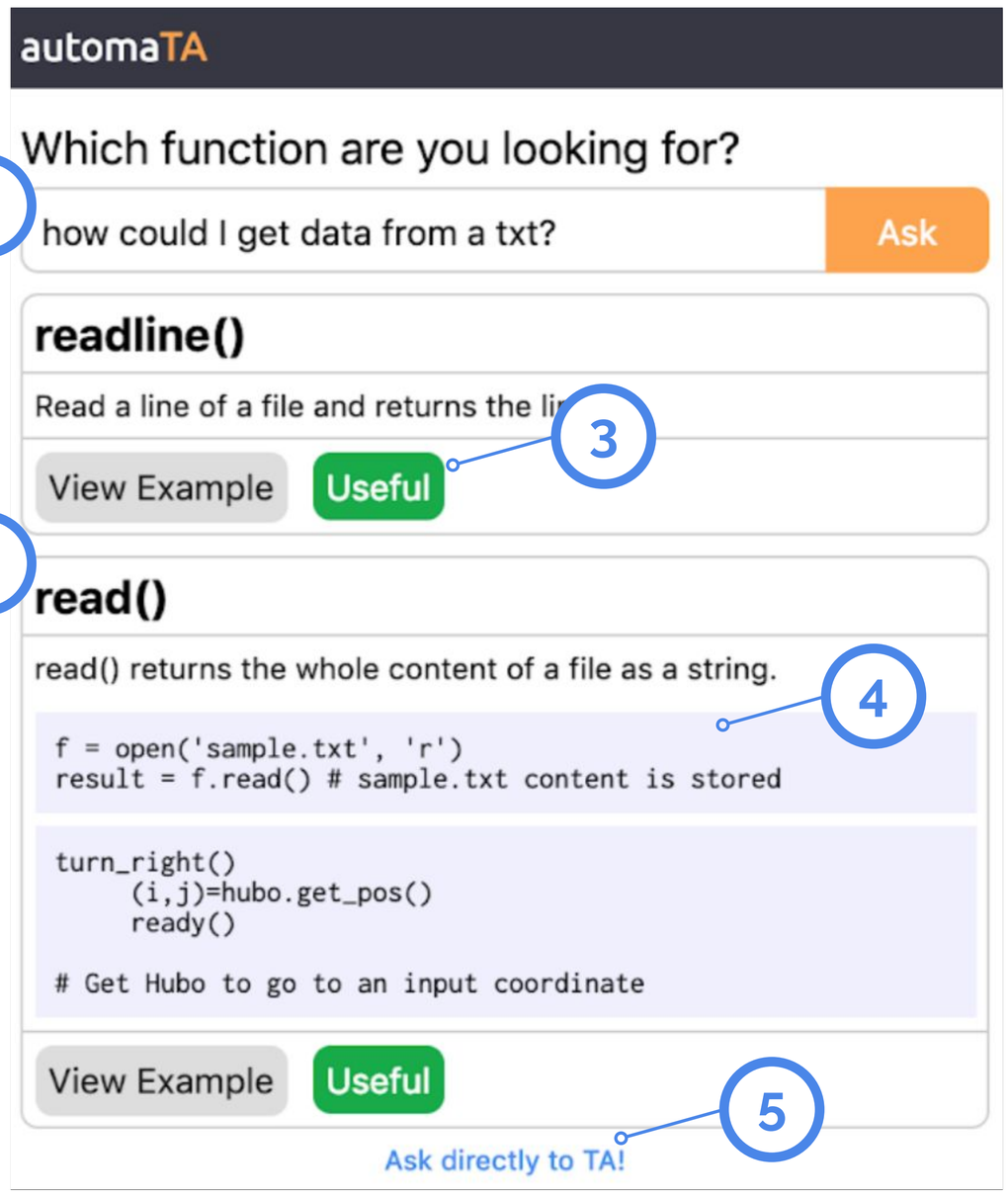
Solution

A. Capture the context of questions from learners' codes.
B. Handover questions with unsatisfied answer to experts for qualified answers.
C. Train machines with the experts' answers for automation.



System

1. Learners describe function to request for suggestions.
2. **automaTA** suggests answers automatically.
3. Learners click Useful when satisfied.
4. Code examples from the documentation and peer's code are provided.
5. Ask questions to expert if unsatisfied with **automaTA**'s suggestion.



Evaluation

- **E1** (N=5): Usability and Functionality of **automaTA**.
  - Participants were satisfied with **automaTA** (4.0/5).
  - "Once I get well-acquainted with the system, the function suggestion will help a lot."
- **E2** (N=9): The feasibility of our human-machine mixed approach, particularly for data collection.
  - After training with 15 Q&As generated within system,
    - users were satisfied with the answers (4.0/5).
    - 10 answers got Useful clicks.

Contributions

We present:

- **a human-machine mixed approach for online context-specific answering, applicable at scale.**
- **an answer suggestion system with ML model trained on context-specific answers from experts.**

Group by Adrien Coquet, Question by Aneeque Ahmed, Teacher by parkjisun, and Code by Fauzan Adiima from the Noun Project