



PaperPal: An AI-Powered Platform for Collaborative Reading and Discussion

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Problem & Motivation

- Collaborative research paper reading is often **fragmented across tools**, and they are not designed for group learning.
- Researchers often struggle and find it really **hard to stay synchronized** during group reading sessions.
- Current AI tools lack integration and contextual awareness, which is needed for effective academic collaboration.

Objectives

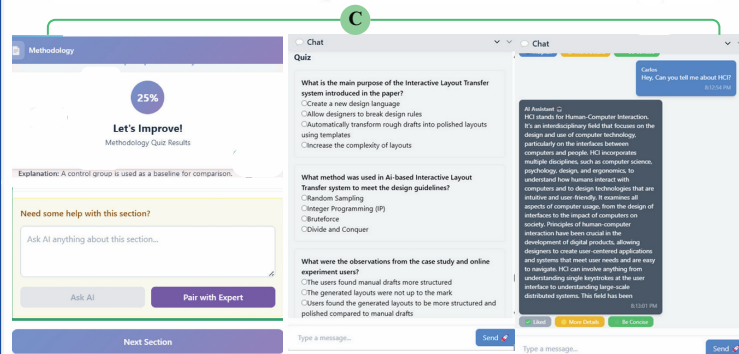
- Facilitate collaborative research paper reading using annotation, AI-powered summarization, and discussion tools.
- Enhance group understanding and engagement** through context-aware AI support and real-time interaction.

How It Works?

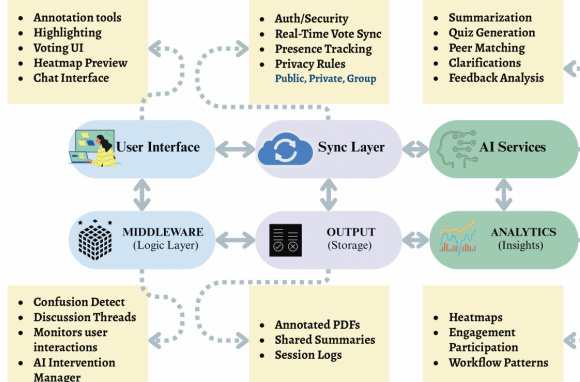
- Upload & Sync**
 - Teams upload papers to a shared workspace
 - Live collaboration: **See others' edits instantly**
- Annotate Together**
 - Highlight and comment simultaneously
 - Color-coded by user with **threaded discussions**
- AI-Powered Insights**
 - Smart Help: Answers questions using the paper's content
- Peer Support**
 - Pair users for help based on:
 - Expertise
 - Current reading progress

What is PaperPal?

An all-in-one platform combining real-time annotation, AI summaries, quizzes, and chat to streamline group paper reading.



System Architecture



Features

- (A) Tunable AI Summaries**
 - Easily **switch between short summaries and detailed explanations**, while AI highlights the main ideas, key contributions, and methods of the paper
- Smart Help from AI or the Right Peer**
 - Receive instant AI support through **on-the-spot clarifications** and **smart help suggestions when the system detects you're facing difficulties**
 - Collaborate with peers who have expertise in the topic, encouraging peer-led learning alongside AI assistance
- (B) Intelligent Annotation Insights**
 - AI helps analyze your annotations** in real time to highlight important patterns, main ideas, and group contributions.
- (C) Intelligent Support**
 - Get clear, personalized explanations when needed, and use **AI-generated quizzes** to strengthen understanding and recall of key concepts
 - The system detects when you're struggling and suggests personalized support
 - Connect with knowledgeable peers** for collaborative learning, diverse perspectives, and active peer teaching alongside AI guidance
 - Combines real-time AI responses with rich peer interaction** for a holistic learning experience
 - AI and peers respond instantly to your questions, keeping study sessions interactive and engaging

Conclusion

- PaperPal promotes deeper understanding and inclusive collaboration** in academic reading groups.
- Our system enhances research discussions by integrating AI-driven insights and group dynamics in one platform.
- By aligning individual insights and group dynamics, it transforms how research is read, discussed, and learned.