

# ReviewerAI: Transforming Peer Review Workflows Through AI-Driven Innovation

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## INTRO AND MOTIVATION



“Embracing advanced AI methodologies offers a transformative way to overcome the challenges of sluggish, biased, and inconsistent peer reviews, ... new era of rigor & transparency in scholarly publishing”

## PROBLEM STATEMENT

- ✓ **Time-Consuming Processes** – Extended delays in finding qualified & available reviewers
- ✓ **Reviewer Bias and Inconsistency** – Unconscious bias affecting objectivity, Reviewer fatigue leading to inconsistent feedback
- ✓ **Limited Expertise** – Inability to cover all subject areas in depth (particularly for interdisciplinary studies), Limited access to domain-specific knowledge
- ✓ **Impact on Career** – Essential need for rapid funding and publication for career progression.

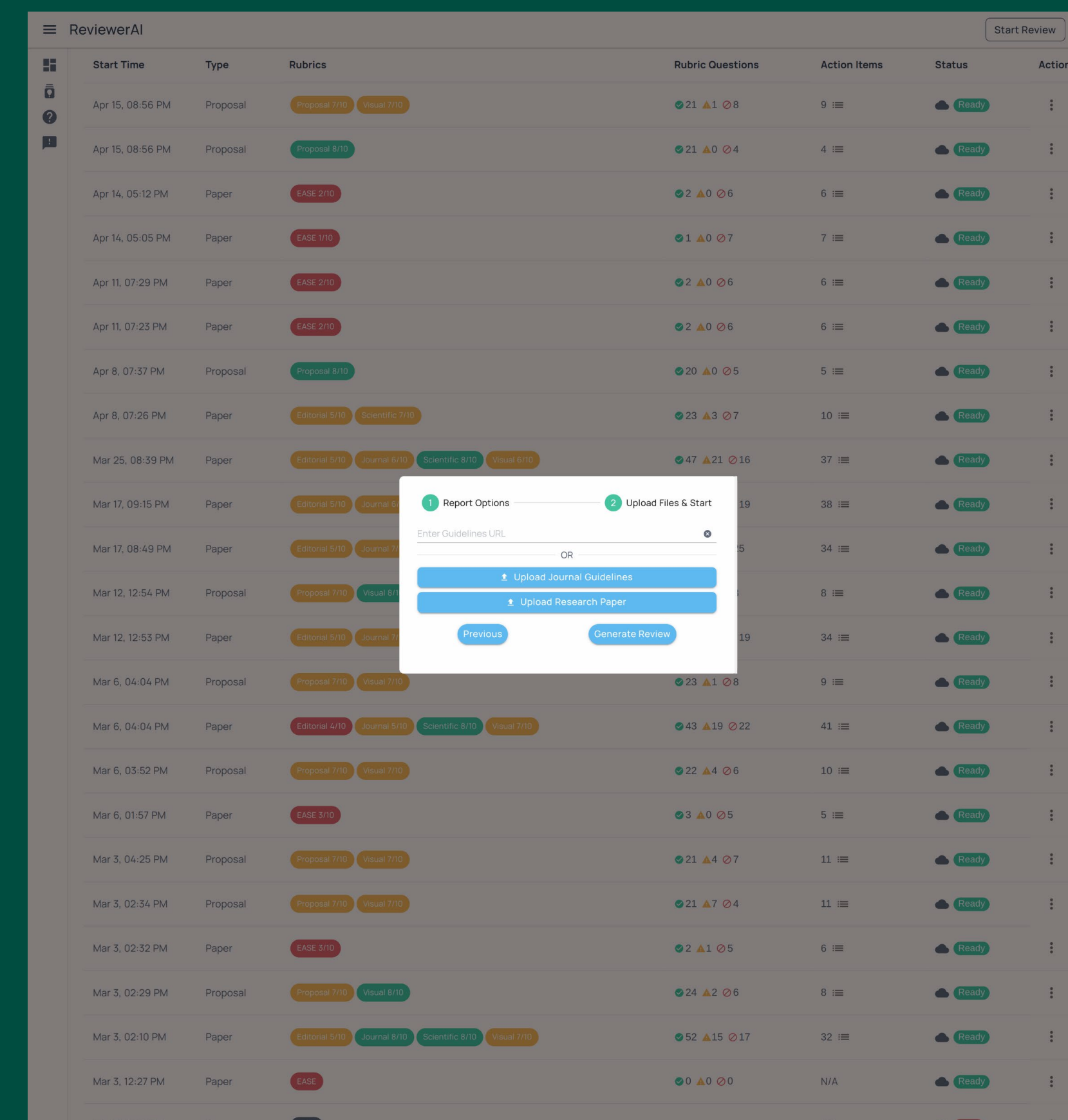
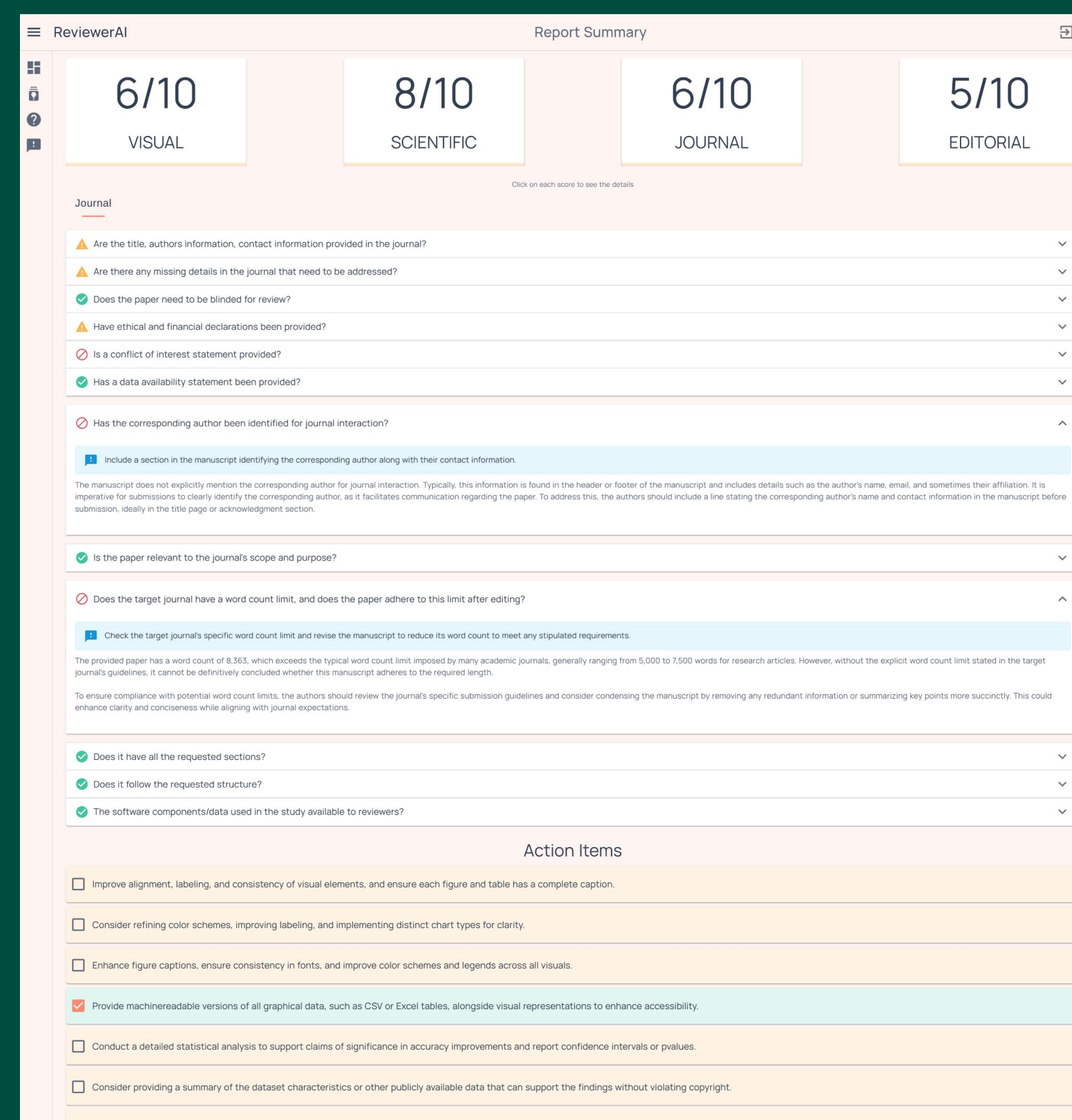
## OUR SOLUTION

ReviewerAI

AI-powered platform for fast, unbiased, precise peer reviews of research articles and grant proposals, by and for academics.

# Can AI Make Academic Content Creation More Accurate and Efficient?

Results – Screenshots from ReviewerAI Platform: (a) Detailed Interactive Report; (b) Dashboard and Review Submission



## RESULTS – AI Foundation

- **Advanced AI:** Fine-tuned domain-specific language models.
- **Multimodal:** Incorporates 120+ point evaluation rubric for precise, multimodal assessments.
- **Action Items:** Delivers multi-faceted, tangible feedback to support informed revisions.
- **Agentic Workflow:** Layers submissions with custom agents for pre- and post-processing.

## RESULTS – Ecosystem, Web Framework, Data Privacy

- **Integrated:** Built on a modular, SaaS-based architecture for integration with editorial systems.
- **On-Device:** Employs cutting-edge optional on-device processing via WebAssembly and WebGPU for rapid execution and data privacy.
- **Gamification:** Gamified UI/UX with color-coded scores and actionable feedback.

## RESULTS – Stakeholder Validation

- **Interviews:** Developed through extensive stakeholder interviews, NSF I-Corps participation, and expert consultations.
- **Rubrics:** Utilizes a curated, comprehensive rubric with flexibility to integrate alternative standards (e.g., EASE’s rubric).

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