Below are the **key issues identified in your entire backend system**, each with its likely consequence and how to fix it. You can download the full report as a PDF here:

⚠️ Issues Summary

Issue	Likely Consequence	How to Fix
1. `sender` not serialized in `MessageSerializer`	Messages will get created without a sender, breaking display and permissions.	Override `create()` in serializer or set `sender` in `perform_create()` in view.
2. `validate_message_body` returns an error instead of raising it	Empty messages may slip through or cause cryptic errors.	Change `return serializers.ValidationError(...)` to `raise serializers.ValidationError(...)`.
3. `conversation` field incorrectly using `CharField`	Data mismatch, missing lookup, or broken filtering logic.	Use `PrimaryKeyRelatedField` or `SlugRelatedField` linked to `Conversation`.
4. Commented-out `create()` in both viewsets	Conversations or messages may not save participants or proper linkage.	Implement and enable `create()` for `ConversationViewSet` and `MessageViewSet` to assign participants/sender.
5. Wrong viewset registered in routers	Misrouted endpoints like `/user/{id}/conversations/` will break or return wrong data.	Update nested router to use `ConversationViewSet` for `user/conversations/`.
6. `updated_at` using `auto_now=True`	Overwrites timestamp on each save — unintended updates.	Use `auto_now_add=True` or manage manually.
7. `email` field not unique	Duplicate emails can lead to account confusion or auth issues.	Set `unique=True` for `email` field.

8. Hardcoded SECRET_KEY default	Might leak insecure key in production.	Remove default fallback, require it in `.env`.
9. Depth in serializers (nested users)	Excessive response size, data leaks.	Limit depth or selectively use nested serializers.
10. Permission class only checks conversation, not message-level	Could allow insecure message actions.	Add `perform_create()` and validate that `sender` belongs to conversation participants.
11. No media file settings setup for `profile_image`	Image upload/download failures.	Set `MEDIA_URL`, `MEDIA_ROOT` and serve via `urlpatterns += static(...)`.
12. JWT token override using `@classmethod`	May not work as expected; possible misuse.	Use instance methods or proper override pattern per DRF docs.
13. `__str__` in `Conversation` may error on unsaved participants	Breaks admin or string conversions.	Safely check `.pk` or catch exceptions if no participants.