Sui RFP
Submission Template

Project Title:
Sui Transaction Explainer – AI-Powered Blockchain Transaction Analyzer
Is this proposal open source?
Yes ⌄

1. Project Proposal

Overview

Sui's execution model enables powerful applications, but transactions involving Programmable Transaction Blocks (PTBs), object mutations, and Move calls are difficult for users and developers to interpret. Existing explorers primarily expose raw data without semantic explanation.

***Sui Transaction Explainer** is an open-source developer tool that converts complex Sui transactions into **clear, human-readable explanations** by combining deterministic transaction parsing with an AI-assisted explanation layer.*

*A fully functional MVP is already live and publicly accessible. A preview AI explanation mode is implemented using an open LLM to demonstrate feasibility. Grant funding will be used to **harden, secure, and productionize** this system for reliable ecosystem use.*

Live Demo: *https://sui-tx-explainer.vercel.app/*

Step/ Deliverable	Duration	Scope
1. Core AI Transaction Explainer	*4 week*	*• Hybrid deterministic + AI explanation pipeline* *• Human-readable explanations for successful and failed transactions* *• Initial decoding for common DeFi interactions (swap, stake, LP)* *• Migrate AI explanation*

		from client-side preview to backend-controlled execution
2. UX & Developer Tooling Enhancements	*3 weeks*	• *Visual representation of PTB execution flow* • *Clear balance change and object lifecycle diffs* • *Exportable structured summaries (JSON)* • *Improved error taxonomy and edge-case handling*
3. Backend, Infrastructure & Documentation	*3 weeks*	• *Backend-for-Frontend (BFF) for secure API access* • *Short-term caching for immutable transactions* • *Rate-limited public API* • *OpenAPI/Swagger documentation and OSS finalization*

2. **Team Pitch**

Solo Developer (India-based)

Name: Nihal Pandey
Role: *Full-Stack Blockchain & AI Engineer*

Background:

*I am an engineering student specializing in **blockchain protocol engineering and security**, with hands-on experience building **production-grade blockchain infrastructure and developer tooling**.*

My experience includes:

- *Building a **high-performance EVM indexer in Rust**, designed to ingest and query blockchain data using asynchronous systems (Tokio, Axum, SQLx, PostgreSQL).*

- *Developing **AI-integrated blockchain applications**, including an award-winning project that used LLMs for structured document analysis and on-chain asset verification.*

- *Conducting **cybersecurity research and threat analysis** during an internship with the **Prime Minister's Office (PMO), Government of India**, focusing on adversarial simulations and infrastructure security (details under NDA).*

- *Multiple national and international hackathon wins, demonstrating the ability to **design, implement, and deliver complete systems under real-world constraints**.*

Relevant Skills:

- *Blockchain & Web3: Transaction indexing, JSON-RPC, smart contracts, protocol-level data modeling*

- *Backend & Infra: Rust, Node.js, REST APIs, Docker, caching layers*

- *AI Systems: LLM integration with deterministic pipelines, prompt constraints, verification-oriented design*

- *Security: Threat modeling, defensive system design, secure API handling*

Why This Project:

*Complex blockchain transactions remain opaque to users and developers, increasing friction and support overhead. With experience in **both blockchain internals and AI-assisted analysis**, I am well-positioned to build a reliable, open-source explanation layer that improves transaction transparency across the Sui ecosystem.*

Links: [LinkedIn](#) | [Github](#) | [Portfolio](#)

3. **Budget**

Detail your budget request and how it will be used. For payroll please include the country where employees will be based as well as how many you plan to employ and with what skill level

Amount	Use (include details)
$3,500	*Engineering & Implementation (Solo Developer – India)* *Senior-level full-stack blockchain & AI eng covering:* *• Hybrid deterministic + AI transaction explanation* *• Failed transaction decoding & Move/PTB reasoning*

	• Visual PTB flow explorer • Backend-for-Frontend (BFF) API, caching limiting • Testing, edge-case handling & open-sou[...] finalization
$1200	Infrastructure & API Costs (Project Duration) • LLM API usage during development & testing • Reliable Sui RPC access • Redis / KV cache for immutable transactions • Serverless backend & frontend hosting Costs are limited strictly to milestone delivery
$300	Contingency (Technical Risk Buffer) Covers potential RPC throttling, LLM cost fluctuations during prompt refinement, and unexpected edge cases in complex PTBs
$5,000 (Total)	Total budget requested for milestone-based delivery of production-ready, open-source Sui transaction explanation tooling

4. Other funding sources
None

5. Long term plan

- *The core web application will remain **free and open source***

- *The public API will use **rate limits** to control operational costs*

- *Post-grant maintenance will focus on:*

    - *Stability and bug fixes*

    - *Incremental support for additional Sui protocols*

    - *Selective feature expansion driven by ecosystem feedback*

- *Potential future sustainability options include sponsored access for wallets and dApps that integrate the API at scale*

Ecosystem Impact

- *Improves transaction transparency and user understanding on Sui*

- *Enables wallets and explorers to present meaningful transaction explanations*

- *Reduces developer support overhead caused by opaque transaction failures*

- *Provides reusable, composable infrastructure for the Sui ecosystem*