

TCG Card Creator AI

FROM THEME TO A BALANCED, PLAYABLE DECK

Team Bun Riel Cua | Academic supervisor: Nhat Quang Tran | Industry supervisor: Oscar Lopez

PROJECT VISION

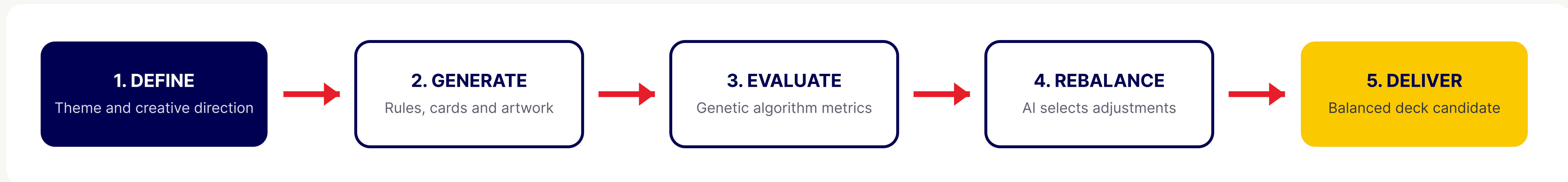
Create. Evaluate. Rebalance.

TCG Card Creator AI explores how generative AI can transform a user-defined theme into a structured trading card game deck, then iterate toward stronger statistical balance.

The workflow combines rule generation, card generation, automated evaluation, AI-assisted decisions, persistent project data and live progress.



How the system works



01 / OBJECTIVES

Five project objectives

Five objectives derived from the implemented workflow.

- 1** Convert player themes into structured game rules
- 2** Generate themed cards with AI text and artwork
- 3** Simulate deck performance with a genetic algorithm
- 4** Rebalance card statistics from measured metrics
- 5** Preserve projects, decks and build histories

02 / SYSTEM OVERVIEW

Architecture and delivery



- FastAPI backend and streaming progress
- PostgreSQL deck and project persistence
- Gemini for text and balance decisions
- Imagen or Pollinations for artwork

03 / CORE CAPABILITIES

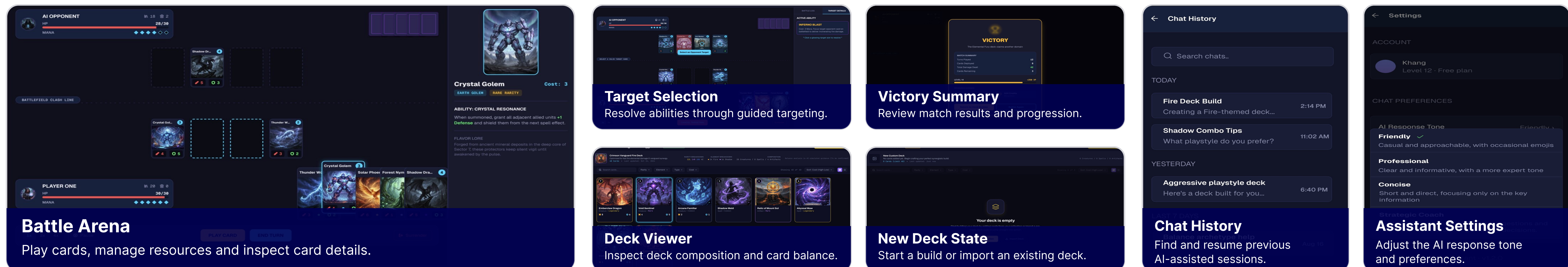
Built for iterative creation

- A Theme-to-deck generation**
Rules, cards and visual direction
- B Automated balance loop**
Metrics interpreted into adjustments
- C Persistent projects and decks**
Stored builds and reusable outputs

Evidence and product experience

PRODUCT EXPERIENCE

Seven interface views across the player experience



CONCLUSION & FUTURE WORK

Toward a licensed, leading TCG creation platform

The prototype validates an end-to-end workflow for generating, simulating and rebalancing playable decks. Future work will pursue licensing partnerships with major TCG rights holders, supporting original custom cards and authorized cards from film series and official collections, while building toward a leading market platform.

TECHNOLOGY

FastAPI | PostgreSQL | Nginx | Gemini | Imagen



Explore the project at the RMIT Showcase

<https://www.rmitvn-showcase.com/sst-school-projects>

Replace this QR with the project-specific Showcase URL before printing.

MEMBERS:
TRUONG PHAM VINH KHANG - s3966150
VAN DUC TRI - s3978223
PHAT DAI VU - s3940677
TUAN NGUYEN ANH - s4023955
MINH CAO DUY - s3818272

BUN RIEL CUA

A0 portrait | 841 × 1189 mm