



*Where strategy meets AI. Think critically, Play strategically!*

## Game Rule

Hi friend,

We are very HAPPY to see you here, Welcome to Helix!

Introducing "Helix," an innovative YouTube series that immerses players in strategic AI-driven environments, ranging from corporate offices to high-tech laboratories and dynamic startups. Participants will assume diverse roles within their teams, collaborating to navigate challenges and develop cutting-edge projects. The ultimate goal? To successfully pitch their innovations to a panel of investors for a chance to win exciting prizes. Join us as we explore the intersection of creativity, strategy, and artificial intelligence in this thrilling competition!

- The Best;  
Helix Team!

See the game rule 😊





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# Game Rule

## Game Name: AI MiniCompany

### Game Overview:

Welcome to AI MiniCompany, a competitive and collaborative strategy game where players simulate an AI company on the verge of securing crucial investment. The goal is to build the most efficient AI solution, but hidden motives, strategic decisions, and tight deadlines will test the team's cohesion and problem-solving abilities.

### Game Structure:

- **Number of IN Players (Core Team):** Up to 6
  - CEO
  - AI Team Lead
  - AI Developer
  - Data Analyst
  - AI Researcher
  - Intern
- **Number of OUT Players (Consultants):** Up to 3 (50% of IN players)
  - Competitor CEO
  - AI Advisor
  - Middle
- **Investor:** The investor will evaluate the final product and decide whether to fund the AI company.
- **Game Moderator:** Provides challenges and oversees gameplay, ensuring fairness.

### Objective:

The IN team must complete a technical AI challenge while navigating potential sabotage from hidden OUT players. In the end, one of the players must pitch the project to secure investment.

### Roles and Characters:

#### IN Players (Core Team):

- **CEO:**
  - **Role:** Focused on the business and practical applications of the AI solution. The CEO is the first to know the challenge and is responsible for selling the final solution to the investor.
  - **Key Actions:** Communicates the challenge only to the AI Team Lead.
  - **Goal:** Secure investment by presenting the project's value and practical applications to the investor, supported by the intern.
- **AI Team Lead:**
  - **Role:** Manages the workflow and delegates tasks to the technical team members,

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bridging the gap between the CEO's vision and the team's work.

○ **Key Actions:** Receives the challenge from the CEO and delegates specific tasks to the AI Developer, Data Analyst, AI Researcher, and Intern.

○ **Goal:** Ensure the team works efficiently and delivers a functioning solution.

- **AI Developer:**

○ **Role:** Writes the code to execute the AI models. Can use tools like ChatGPT for programming tasks but must follow guidance from the technical team.

○ **Key Actions:** Implements the AI models and manages the technical infrastructure.

○ **Goal:** Ensure the code functions properly and supports the team's AI solution.

- **Data Analyst:**

○ **Role:** Specializes in data preparation, cleaning, and feature engineering, ensuring the models have clean, usable data.

○ **Key Actions:** Prepares the data, selects features, and provides insights on necessary data transformations.

○ **Goal:** Deliver high-quality data for the AI models.

- **AI Researcher:**

○ **Role:** Focuses on research and selecting advanced machine learning models. They push innovation and use cutting-edge techniques.

○ **Key Actions:** Chooses, tests, and optimizes machine learning models to meet the challenge.

○ **Goal:** Create an optimized and innovative solution using advanced AI methods.

- **Intern:**

○ **Role:** An aspiring AI professional with limited experience, tasked with communicating the results of the AI solution to external parties (Investors) if needed.

○ **Key Actions:** Learns from the team and explains why the final solution is better than alternatives.

○ **Goal:** Provide a clear and compelling technical explanation of the AI solution's strengths.

### OUT Players (External Consultants, Hidden Roles):

- **Competitor Team Lead (Max 3 pieces of advice):**

○ **Role:** An undercover rival team lead aiming to sabotage the project to win an SOS card for future rounds. They directly communicate with the AI Developer, Data Analyst, AI Researcher, and Intern.

○ **Key Actions:** Misleads or sabotages technical team members to undermine the final solution.

○ **Goal:** Sabotage the project subtly without being caught, so their company wins funding next time.

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- **Advisor (Max 3 pieces of advice):**
  - **Role:** A genuine external consultant providing high-level guidance on novel AI models and technologies. This player knows something about the test set.
  - **Key Actions:** Helps the AI Researcher and Data Analyst with new model ideas or technical advice.
  - **Goal:** Ensure the team has access to cutting-edge AI knowledge and techniques.
- **Middle (Max 3 pieces of advice):**
  - **Role:** A mid-level consultant who is unpredictable. Their motives are unclear, and they may help or hinder the team.
  - **Key Actions:** Offers advice that can swing between helpful and harmful depending on their strategy.
  - **Goal:** Create enough chaos or confusion without revealing their true intentions.

### Gameplay Phases and Mechanics:

#### 1. Challenge Introduction (5 min):

- The Game Moderator provides the challenge to the CEO. Challenges may be technical (e.g., find bias in a generative model and fix it) or application-based (e.g., "Create an AI that predicts real estate prices in a region with unusual market trends").
- The CEO cannot present the full challenge to the team but can give the AI Team Lead enough high-level information to get started.

#### 2. Delegation (1 hour 15 min):

- The AI Team Lead plans and assigns tasks to the AI Developer, Data Analyst, and AI Researcher. Each member focuses on their specialty, collaborating to produce the solution.
- **External Consultation:**
  - OUT players begin interacting with the IN team.
  - Competitor Team Lead subtly sabotages by recommending inefficient data strategies or inappropriate models.
  - AI Advisor offers genuinely useful advice but must build trust with the team (and has some knowledge about the test set).
  - Middle: Offers unpredictable advice.
- **Random Events:** The Game Moderator can introduce random events requested by OUT players.
- OUT players offer advice through private chats or voice calls, keeping their true intentions hidden until the end.

#### 3. Model Evaluation:

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- For challenges with a test set, the test data will be private, and model performance will be evaluated by the moderating team, with results announced at the end.
- 4. Presentation and Pitch (10 min + 5 min):**
  - The team presents their work in 10 minutes, led by the intern. The AI Team Lead and CEO can support the discussion during the last 5 minutes.
- 5. Role Reveal and Evaluation (5 min):**
  - After the pitch, all OUT players reveal their roles.
    - If the Competitor CEO successfully misled the team without being caught, they receive points for sabotage.
    - If the team catches the Competitor CEO, they prevent the sabotage and earn bonus points.
  - The Investor then decides whether to fund the project based on the CEO's pitch, the technical solution, and overall performance.

### Scoring System:

- **IN Team (20 points total):**
  - Successfully completing the AI challenge: +12 points
    - +3: Communication score
    - +4: Idea score
    - +3: Algorithmic performance score (e.g., speed)
    - +2: Team satisfaction score ("happy env score")
      - Model performance exceeds a threshold (e.g.,  $R^2 > 0.8$ ): +5 points
      - Catching the Competitor CEO before the role reveal: +3 points
- **OUT Players:**
  - **Competitor CEO:**
    - Successfully sabotaging the team without being caught: Receives an SOS card and +3 points
  - **AI Advisor:**
    - If the team wins, the advisor receives +3 points for their contribution
  - **Middle:**
    - If they create enough chaos and confuse the team, they earn +3 points
    - If they successfully help or hinder the team unnoticed: +5 points

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*These scores will be recorded for future research on leadership and performance. Each player's score will be calculated as (total points) / (number of team players).*

### Additional Gamification Features:

- **Random Technical Issues:**  
The Game Moderator can introduce challenges such as buggy datasets, server crashes, or time-limited coding tasks. During this time (e.g., 5 minutes), all IN members must pause their work and discuss ideas and solutions.
- **Skill Boost Cards:**  
The IN team can receive one-time-use cards that grant temporary advantages (e.g., data-cleaning speed boost or a free hint from the AI Advisor) to add strategic depth to the gameplay.
- **Game Cards:**  
Some cards (e.g., changing roles) can be introduced by the moderator or requested by OUT players.

### Special IN Player Cards (Max 2 per team leader):

- **"SOS" Card:**
  - **Description:** The AI Team Lead can call upon the AI Advisor for a guaranteed helpful suggestion. The AI Advisor must provide a strategic tip that directly improves the team's solution. This is facilitated through the moderator, with no direct contact between OUT and IN players for the card's effects.
  - **Cost:** -1 point (deducted from the IN team's total score)
  - **Limit:** Can be used only once.
- **"Time Warp" Card:**
  - **Description:** Any IN player can request a Time Warp, granting an extra 10 minutes to complete a task (e.g., debugging code, fine-tuning the model, or improving data cleaning).
  - **Cost:** -0.5 points
  - **Limit:** Can be used twice per game.
- **"Data Shortcut" Card:**
  - **Description:** The Data Analyst can request pre-cleaned and formatted data from the Moderator. This data will be perfect for model training.
  - **Cost:** -3 points (a significant penalty due to the shortcut)
  - **Limit:** Once per game, can only be used during the data preparation phase.
- **"Data Unblocker" Card:**
  - **Description:** The Data Analyst or AI Developer can unlock access to a part of the

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hidden test dataset (not the actual data) or an important feature.

- **Cost:** -1 point
- **Limit:** Once per game.

### Special OUT Player Cards:

- **"Whisper" Card:**
  - **Description:** The Competitor CEO can secretly influence one of the IN players (via the Middle player) for 5 minutes, offering misleading advice that appears beneficial.
  - **Effect:** For 5 minutes, the targeted IN player may consider the Competitor CEO's advice as trustworthy.
  - **Cost:** -1 point for the Competitor CEO (risk factor if caught, as credibility will be lost).
- **"Consultant Confusion" Card:**
  - **Description:** The Middle player can play this card to confuse the entire team for 3 minutes by giving ambiguous advice that may or may not be useful.
  - **Effect:** All team members must listen to the Middle player and follow their confusing advice for 5 minutes, causing chaos and disrupting focus.
  - **Cost:** -1 point for the Middle player.
- **"Savior's Insight" Card:**
  - **Description:** The AI Advisor can play this card to provide a game-changing insight at a critical moment. This is meant to guide the team toward success.
  - **Effect:** The team gets a significant boost toward solving a major technical hurdle.
  - **Cost:** -1 point for the AI Advisor, but if the team wins with the Advisor's help, the Advisor gains +2 points.

### Gamble Cards:

These cards, introduced by the Moderator, stir up the game even more. Gamble Cards have no point cost but involve a risk, where the team must make a decision:

- **"Switcher" Card:**
  - **Description:** The Moderator can introduce this card, forcing two IN players to switch tasks (e.g., the AI Developer must handle data cleaning, and the AI Researcher must implement code) for 10 minutes.
  - **Limit:** Once per game, can be used at any point during gameplay.