#### LETTER OF INFORMED CONSENT

Daniel David N. Bador Undergraduate Researcher Department of Mathematics and Computer Science

Brymer Bernard R. Meneses
Undergraduate Researcher
Department of Mathematics and Computer Science

May 23, 2025

Jerry Marquez Basanes
Expert Damath Player
141 Pantal, Manaoag, Pangasinan, PH 2430

## Dear Mr. Basanes,

We are writing this letter to invite you to participate in a research study that aims to assess the capabilities of a transformer-based AlphaZero model in the game of Damath, specifically Integer Damath. This study seeks to understand how advanced artificial intelligence systems perform against an expert human player.

The primary objectives of this research are to:

- Evaluate the performance of transformer-based AlphaZero models in the game of Damath
- Analyze strategic patterns and decision-making processes in expert-level play
- Compare human expert strategies with AI-generated approaches
- Contribute to the understanding of AI capabilities in traditional Filipino mathematical games

As an expert Damath player, your participation will include:

- Playing 10 games of Damath against the AI system
- Participating in gameplay sessions lasting approximately 30 minutes
- Providing brief feedback on AI moves and strategies
- Allowing researchers to record and analyze your moves
- Participating in a short post-game interview about your experience

By signing the consent form attached to this letter, you confirm that you:

- Are recognized as an expert or advanced Damath player
- Have significant experience in competitive Damath gameplay

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- Are at least 18 years of age (or have parental/guardian consent if under 18)
- Voluntarily agree to participate in this study

The following data will be collected during your participation:

- Game moves and decision sequences
- Game outcomes and performance metrics
- Feedback and interview responses

All collected data will be used solely for research purposes and will contribute to academic publications and presentations about AI capabilities in strategic games.

- Your participation is entirely voluntary
- You may withdraw from the study at any time without penalty
- You may skip any questions or activities you are uncomfortable with
- Withdrawal will not affect any benefits or relationships you may have with the research institution

### Potential Risks:

- Minimal risk associated with gameplay fatigue
- No significant psychological or physical risks anticipated

#### Potential Benefits:

- Contribution to advancing AI research in strategic games
- Opportunity to experience cutting-edge AI technology
- Potential insights into your own gameplay strategies

If you agree to participate in our research study, please sign the following consent form attached with this letter.

Respectfully,

Daniel David N. Bador

Researcher

Brymer Bernard R. Meneses

Résearcher

# INFORMED CONSENT FORM

I have read and understood the information provided about this research study. I have had the opportunity to ask questions, and all my questions have been answered to my satisfaction. I understand that my participation is voluntary and that I may withdraw at any time.

I hereby give my informed consent to participate in this research study on transformer-based AlphaZero model assessment in Damath gameplay.

☑ Lagree to have my gameplay data recorded and analyzed
☐ Lagree to participate in feedback sessions
☑ I agree to the use of my data in research publications
Participant Signature: Baraner  Participant Name: DERRY M. BASANEC  Date Signed: DI 23 D
Researcher Signature:
Researcher Name: DAPORIDANIEL DAVID N.
Date Signed: 05/23/7075
AM
Researcher Signature:
Researcher Name: MENESES, BRUMER BERNARD R.
Date Signed: 05/22/2025

If agree to participate in the gameplay sessions