

Deal-or-No-Deal Negotiation Dataset

Overview

A comprehensive negotiation dataset consisting of 12,234 multi-turn dialogues, enhanced with strategic reasoning and behavioral analysis. The dataset captures negotiations between buyers and sellers over three item types (books, hats, balls), with explicit modeling of cooperative vs. competitive behaviors.

Dataset Architecture

Core Components

- Raw dialogue turns with full contextual history
- Strategic reasoning annotations
- Action classification and price analysis
- Behavioral metrics (cooperation vs. aggression)
- Complete value state tracking

Key Statistics

- Total dialogues: 12,234
- Average turns per dialogue: 5.98
- Overall success rate: 78.49%
- Cooperation ratio:
 - Buyers: 58.24%
 - Sellers: 61.65%

Data Splits

- Training: 10,095 dialogues
- Testing: 1,052 dialogues
- Validation: 1,087 dialogues

Enhanced Training Datasets

Role-Specific Training Sets

1. `buyer_training.csv` (36,596 examples)
 - Strategic buyer reasoning templates
 - Price targeting metrics
 - Value-based negotiation patterns
 - Cooperation tracking
2. `seller_training.csv` (36,595 examples)
 - Seller-specific strategic templates
 - Price anchoring analysis
 - Feature emphasis patterns
 - Deal success metrics

3. `generalist_training.csv` (73,191 examples)

- Balanced buyer/seller interactions
- Complete negotiation dynamics
- Cross-role strategic patterns
- Full contextual information

Structured Fields

- **Core Fields**

- `role`: Agent role ("buyer"/"seller")
- `context`: Full dialogue history
- `thought`: Strategic reasoning annotation
- `action`: Structured action type
- `utterance`: Raw turn text

- **State Tracking**

- `values`: Agent's item valuations (JSON)
- `partner_values`: Counterpart valuations (JSON)
- `price`: Current offer/counter amount
- `outcome`: Final deal status and distribution

Behavioral Metrics

- **Strategic Elements**

- Thought quality scoring
- Price targeting accuracy
- Strategic template adherence
- Feature emphasis tracking

- **Cooperation Metrics**

- Cooperative vs. aggressive actions
- Price fairness analysis
- Deal success correlation
- Cross-turn behavior patterns

Example Formats

Original Format

```
<input> 1 4 4 1 1 2 </input>
<dialogue>
  THEM: i would like 4 hats and you can have the rest . <eos>
  YOU: deal <eos>
</dialogue>
<output> item0=1 item1=0 item2=1 item0=0 item1=4 item2=0 </output>
```

Enhanced Format

```

{
  "role": "buyer",
  "context": "i would like 4 hats and you can have the rest .",
  "thought": "Partner's offer of 4 hats achieves 85% of target value, accepting is strategic",
  "action": {
    "type": "accept",
    "is_cooperative": true,
    "items_mentioned": ["hat"]
  },
  "utterance": "deal",
  "values": {
    "book": {"count": 1, "value": 4},
    "hat": {"count": 4, "value": 1},
    "ball": {"count": 1, "value": 2}
  },
  "outcome": {
    "success": true,
    "distribution": "item0=1 item1=0 item2=1 item0=0 item1=4 item2=0"
  }
}

```

