### Motivation

- Have fun and stay fit
- Computer games should require players to go out in the real world
- Solution: Location based games using Mobile Devices with GPS
- Location based games allow players to play in augmented reality
- Play in real world with fictional stories

### Problem

- Location based games are good solutions to get players playing in the real world
- But they are too location specific, hence static
- A new game needs to be made for every location or games for all locations to exist
- This poses a scalability issue for such games to be successful
- Different players like different game genres

### Solution

- We propose a three-fold solution:
  1. A generic game engine for which end-users can author different types of games
  2. A web-based authoring tool to author games for generic game engine
  3. Translation algorithm that allows games to be playable in new locations

### Generic Game Engine

- **A Generic Game Engine for multiplayer Location Based Games**
  - Varied game types are supported. For instance, role playing games, competitive games, collaborative games
  - Players can have Inventory
  - Players have access to maps that show their and their team-members locations
  - The game supports texts, images, audio and dialogue trees.

### Location Translation

- Restructures original story into a new story for different location
- Finds places in the new location that are analogous to original location, preserving the semantics of the game
- Preserves the distance between two checkpoints in the story by maintaining the inter-checkpoint distance in the translated story
- A search problem where we search for an optimal restructured path
- We use hill-climbing to obtain such path and our heuristic accounts for inter-checkpoint distance, total distance and the angle formed by the path

### Future Work

- Incorporate social networking and point systems to the games to motivate users to play the games
- Encourage authors to provide relevant and appropriate tags while authoring the stories in the authoring tool
- Modify the translation algorithm to rank the available optimal paths and let the author choose
- Develop a meta data storage with a deontological hierarchy to ensure translation in cases where exact matches are not found

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