CMPS 148/248: Interactive Storytelling

Computational Storytelling Systems and Narratology

January 12, 2010
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Announcements

• Website updates
  – Updated schedule
  – Grading scheme
  – Homeworks and project description (subject to slight changes)
  – Exam date
• Ben Samuel’s Office hours:
  • BE358, Wednesdays from 1:30-2:30
Propp

• Limited number of narrative functions as primitives with specific ordering constraints
  + ready-to-use
  + several good (albeit limited) story generators
  - no branching
  - lack of character perspective, psychological level of representation
    • Grabson and Brown, Machado et al., Peinando and Gervas, Hartmann et. al.
Once upon a time there lived a king and a queen in a kingdom far far away who loved each other dearly. They had a beautiful daughter, the princess.
Greimas

- Linguistic perspective on narrative analysis
  - Role-based analysis (concept of *actant*)
  - Small number of formulas organized around actors
  - Additional semantic fields

- Few implementations (Theune et. al.)
- Limited analysis of story progression
Barthes

• Extends Propp’s linear sequencing to give the story a structure that opens space for choice points
• Codes: ACT, REF, SYM, SEM, HER
• Nuclei and supporting actions
• For computational approaches, HERmeneutic – how narrative cues can be interpreted by the reader – can be determinant of suspense because it forces interpretation to ‘fill the gaps’
  – Zagalo et. al., Cavazza et. al.
• Centered on Character’s roles (Agent -> Patient)
• Agent types
• Voluntary and Involuntary

A. The Patient has no information about X
B. The Patient has information about X and:
   - believes s/he actually has property X
   - believes s/he has property not X
   - is unsure about whether s/he is X or not X

• Cavazza et. al., Mateas and Stern, Schafer et. al., Szilas, Donikian et. al.
Review of Planning
I-Storytelling: Hierarchical Task Networks
IDTension

• Generator of dramatic actions, capable of interacting with the audience.
• System based on a combination of several theories of narrative.
• From the structuralist theory
  – narrative logic, able to produce a set of possible actions at a given time. The narrative logic manipulates the following elements in the world of the story:
  • Goals: Some states in the world of the story that characters want to reach
  • Tasks: Concrete activities which lead to the goal
  • Obstacles: practical elements in the world of the story which make some tasks impossible
  • Actions: what characters do, including information transmission, influences, delegations, task performance, sanctions, etc.
  • Characters: entities which have goals and perform actions
Mimesis/Zocalo

0. Current Game State

1. Move(fred, tower, armory)
   - At(fred, tower)

2. PickUp(fred, ammo, armory)
   - At(fred, armory)

3. PickUp(fred, gun, armory)
   - At(fred, armory)

4. Load(fred, gun, ammo)
   - Has(fred, gun)
   - Loaded(gun)

5. Move(fred, armory, bunker)
   - At(fred, armory)

6. Shoot(fred, barney, gun, bunker)
   - At(fred, bunker)
   - At(Barney, bunker)

7. Goal State

Has(fred, ammo)
- Wounded(fred)
1: Red Greet Wolf
   (knows wolf red)

2: Red Tell Wolf About Granny
   (knows wolf granny)

3: Wolf Eat Red
   (eaten red)

4: Wolf Eat Granny
   (eaten granny)

Author Goal 1

5: Hunter Kill Wolf
   ~(alive wolf)

6: Red Escape Wolf
   ~(eaten red)

7: Granny Escape Wolf
   ~(eaten granny)

Author Goal 2

8: Red Give Granny Cake
   ~(eaten red) (has granny cake) ~(eaten granny)

Outcome
Aristotelian

- Laurel (1991)
- Tomaszewski, Binstead
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Beyond Fabula

• Narrative Prose Generation (Callaway and Lester)
  – Discourse Structure (Grosz and Sidner)
    • Nucleus, Satellite
  – Stylistic text: Formality, Floridity, etc. (Hovy)

• Expressive Lighting (Seif El-Nasr)

• Cinematic Camera Control (Jhala, Bares)

• Procedural Animation (Horswill)