

Pragbot 2.0

Moving Pragbot Language Interactions Toward More Realistic Situations

Oct 2010 Review

Pragbot ~~2.0~~ 2.1

Moving Pragbot Language
Interactions Toward More Realistic
Situations with Moving Badguys

Oct 2010 Review

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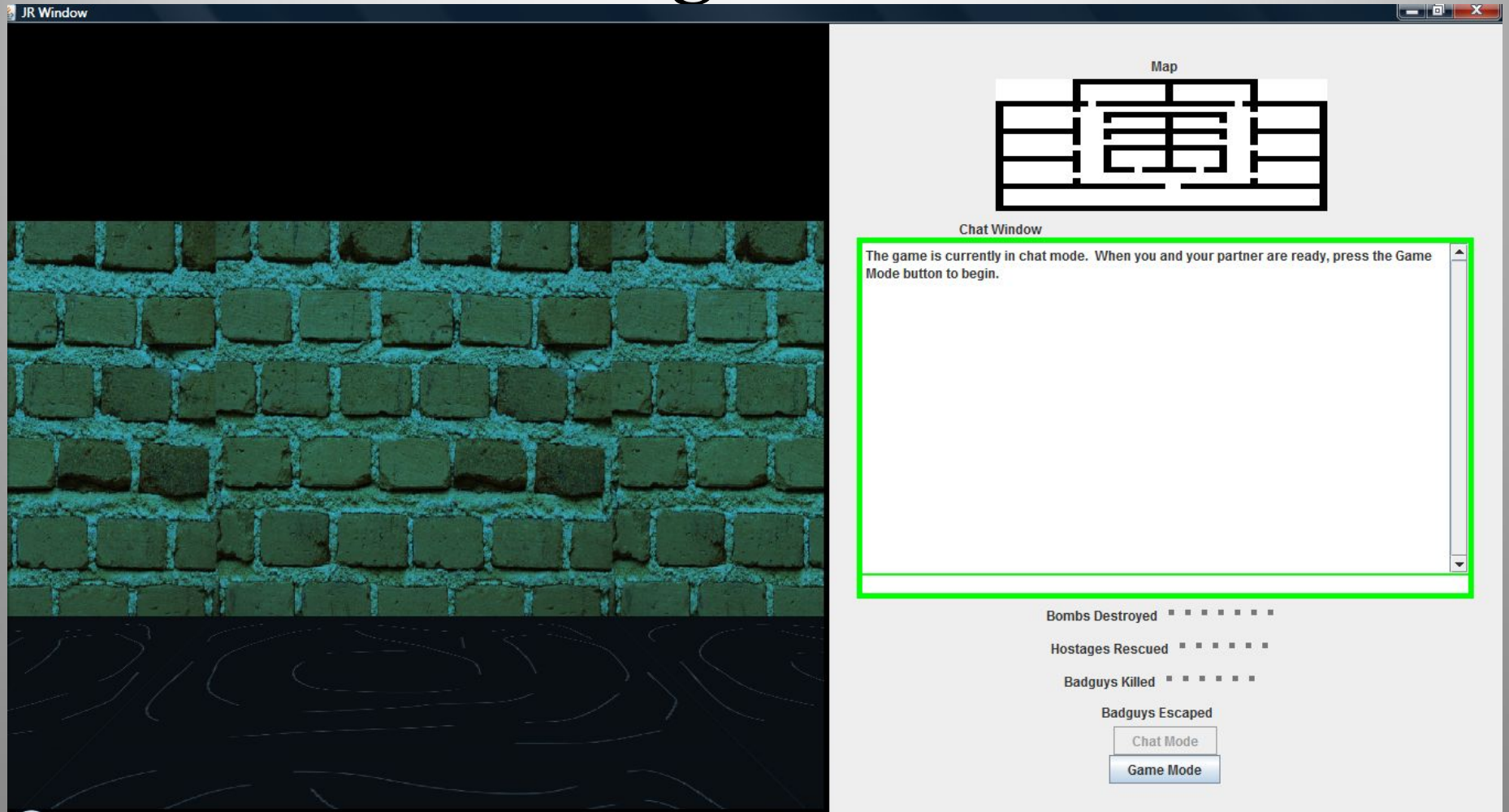
Purpose

- We were tasked with collecting a corpus of data to study language interaction
 - Emphasis on intentions
- Two years ago, we presented Pragbot, which collected 100 transcripts
 - Thanks Karl Schultz et al.
- Last year, we presented Pragbot 2.0, which was a 3D version
 - Lacked in an interesting game dynamic

Pragbot 1.0 Review

The screenshot displays the Pragbot 1.0 interface. On the left is a maze with a yellow robot labeled 'P1' at its starting position. The right side of the interface features a control panel with a text input field at the top labeled 'Type text here:'. Below this, it shows 'P1 turns remaining: 500' and 'P2 turns remaining: 500', along with an 'Indicate Task Complete' button. The central area is a card selection interface with a 'Click a card to pick it up:' prompt and a 'Click a card to drop it from your hand:' prompt. Navigation buttons for 'up', 'down', 'left', and 'right' are positioned around the card area.

Pragbot 2.1



Pragbot 2.1 gameplay

- Two players coordinating to *contain* and destroy badguys
 - That means the badguys move!
- Rescue hostages, defuse bombs, keep CMDR alive
- Players have to develop a strategy to keep the badguys from escaping
 - Escape of one badguy results in a loss

Pragbot 2.1 gameplay

- CMDR and JR see badguys, and they react
 - Retreat in the case of badguys, guards will do nothing
- CMDR will kill a badguy if he stares long enough
 - JR can only make a badguy retreat

Pragbot 2.1 dynamic environment

- In older versions, the environment was static
- Moving badguys mean the environment is dynamic
- You cannot establish a full strategy ahead of time and proceed silently
- Great for interesting transcripts

Chat Window

The game is currently in chat mode. When you and your partner are ready, press the Game Mode button to begin.

me: Hello CMDR, what's up?

Player is typing

CMDR: Not much

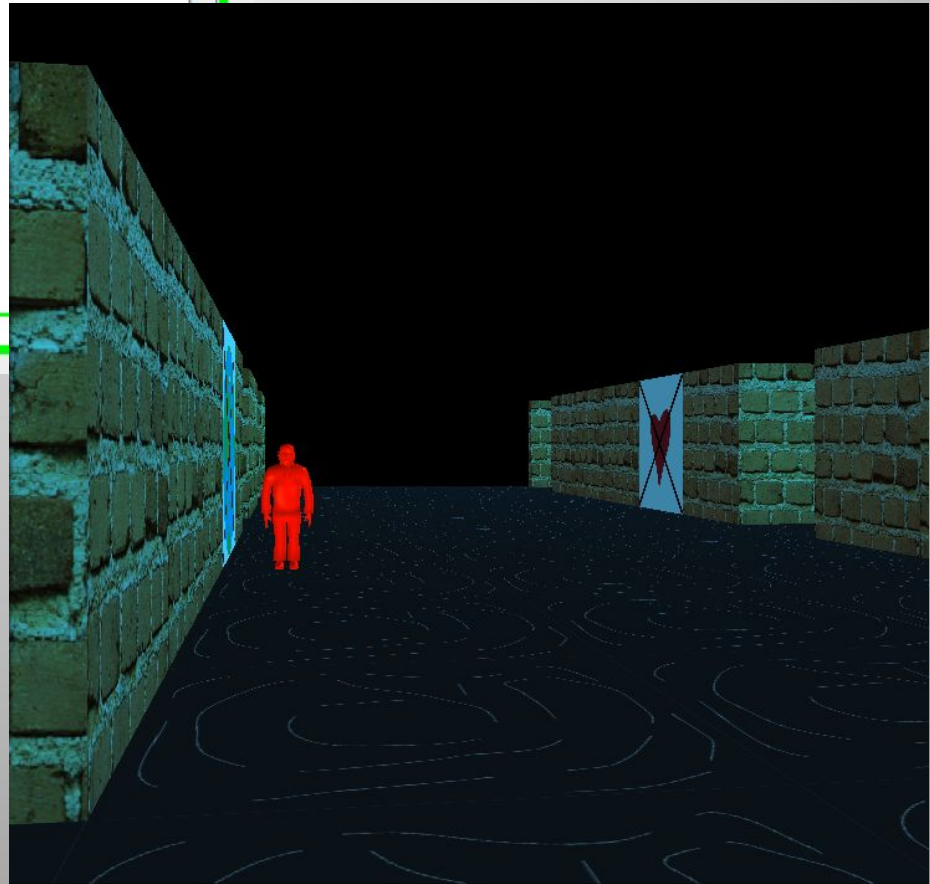
Chat Window

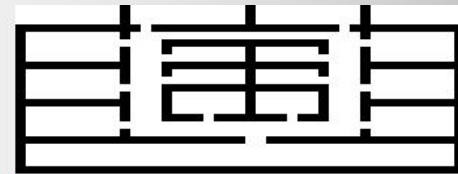
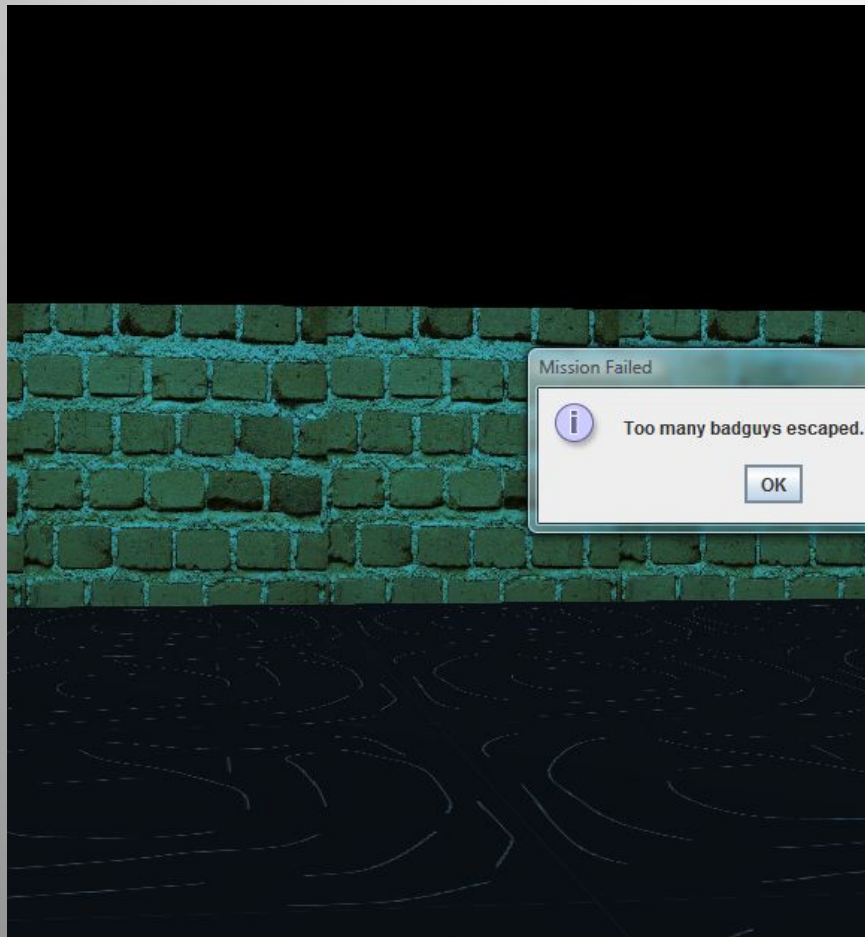
The game is currently in chat mode. When you and your partner are ready, press the Game Mode button to begin.

me: Hello CMDR, what's up?

Player is typing

CMDR: Not much





Chat Window

The game is currently in chat mode. When you and your partner are ready, press the **Game Mode** button to begin.

me: Hello CMDR, what's up?
Player is typing
CMDR: Not much

me: I resumed the game.
me: I entered chat mode. Click 'Game Mode' to unpaue the game.
me: I resumed the game.
me: A badguy escaped! Contain remaining badguys!
me: Badguys have escaped. Mission failed.
me: [Game Over. Further actions will not be logged.]

Mission Failed

 Too many badguys escaped. Mission failed.

OK

Bombs Destroyed ■■■■■■

Hostages Rescued ■■■■■■

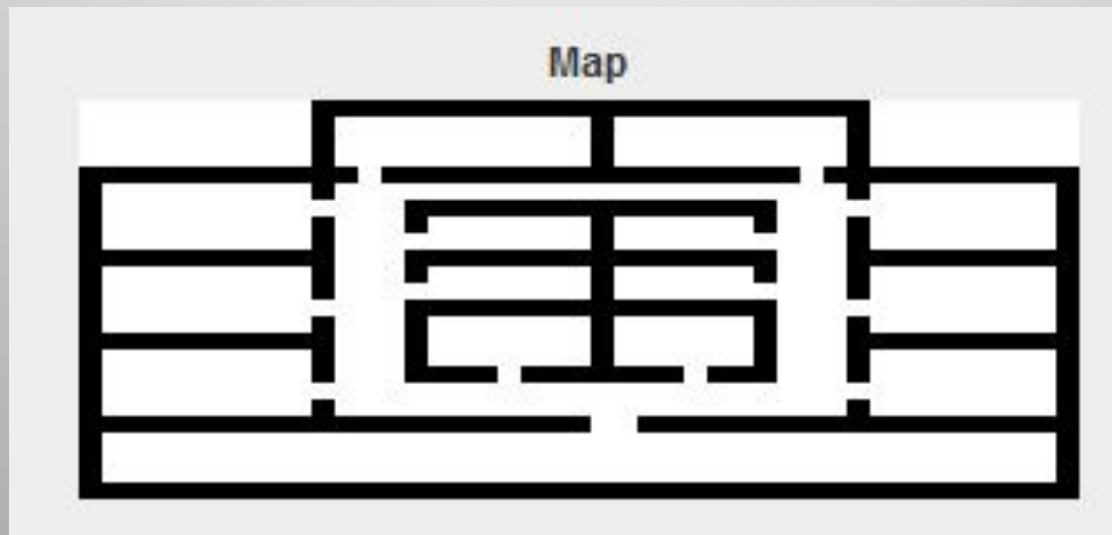
Badguys Killed ■■■■■■

Badguys Escaped ■

Chat Mode

Game Mode

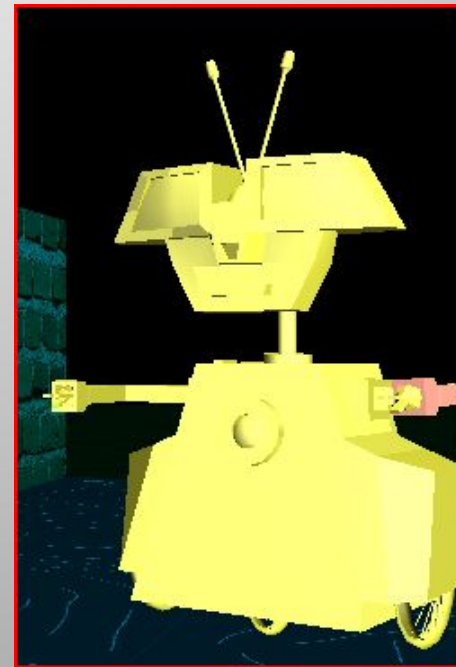
Pragbot 2.1 environment



Team Pragbot

- Pragbot has benefited from the work of many
- Going to spend some time discussing the contributions of other folks, then talk about future directions of Pragbot

Cadets



Cadets

- Joe Lucas and Cary Hooper were our guests for 2 weeks
- Played a ton of games, and really helped narrow down a lot of bugs
- Also provided a lot of suggestions that have made it into the final version

Cadets

We played a couple good games today and discovered some interesting stuff.

- 1) If the commander is the only one to enter and exit chat mode, the game usually will not freeze
- 2) After getting the chat minimization error, cmdr tried to chat anyway, freezing jr
- 3) One game we were able to save all hostages and diffuse all bombs but there was still one bad guy on the map that we could not find (we think he was stuck in a wall because jr got flipped and cmdr could not right him (only to have him immediately flipped again)).
- 4) The win message appears after all terrorists are found (but hostages and bombs can remain on the map), so all objectives should be completed before this message appears
- 5) After the "win" message appears, any characters continue moving in the direction they were moving at the time of the victory (but entering chat fixes that)
- 6) It mainly freezes when going from chat to game, not game to chat

Some things that we thought could add to the game:

- 1) add a "partner is typing" message to the chat so you know if your partner has something to say (they may be typing something long and you going back to game mode could cut them off)
- 2) maybe include a big "chat mode" message across the game interface when the other players switches to chat mode (often if one player switches the other player doesn't notice and may think they froze)
- 3) Different way to kill enemies. The two solutions we thought of were pressing a button while looking at them or having to stare at them longer. The commander would sometimes kill enemies simply by sweeping over them and not even notice
- 4) multiple doors in rooms (so that terrorists can escape and are not cornered in rooms by cmdr)

Bigger picture changes:

- 1) Add information that can be found by jr or cmdr and sent up to a "higher" entity. This exchange of information between jr and cmdr and cmdr and "higher" may force more communication.
- 2) Time constraints may cause a different kind of natural language to be collected than there is already (and a kind more applicable to a stressful situation)

GUI

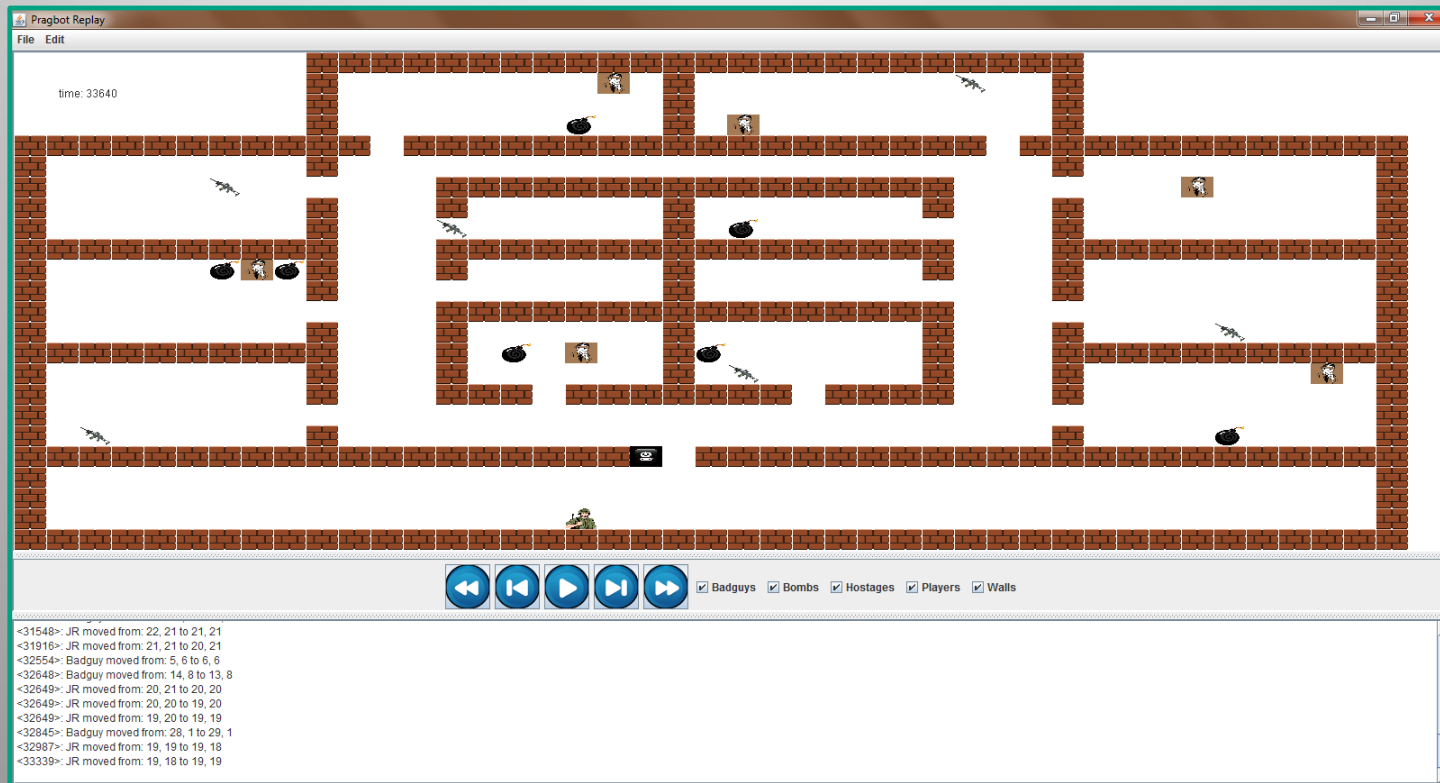
- 1) Maybe a button to enter chat (right now entering and exiting chat are the only need for the mouse, so making the keyboard the only interface may make gameplay more smooth)

I hope this stuff is helpful. I think the cmdr being the only one with chat clearing up a lot of bugs may be a breakthrough. Beating the game may also have provided the first complete log.

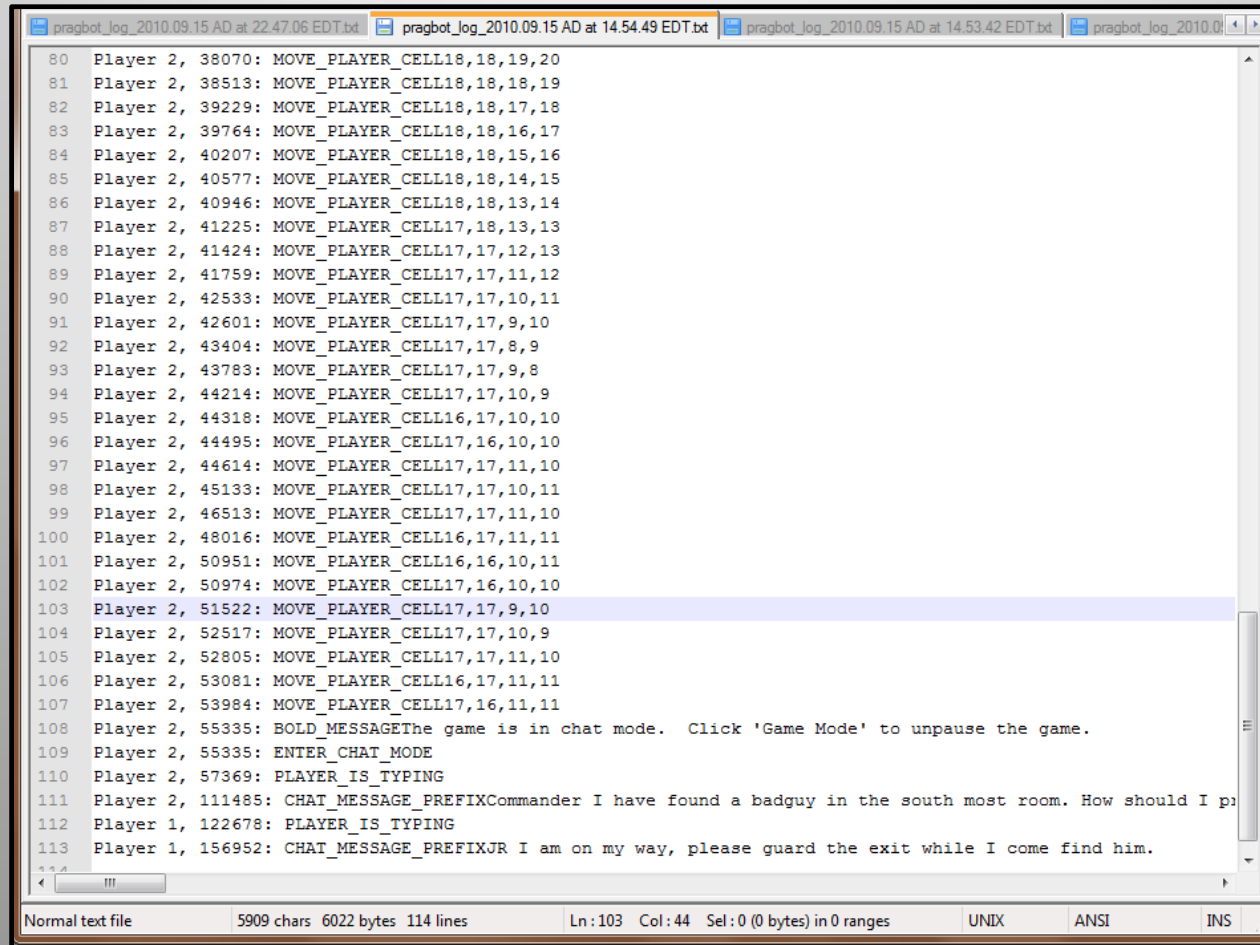
Pragbot Replayer

- Developed by Ryan Gormley
- Idea is to visually replay games of Pragbot
- Really enhances the text transcript

Pragbot Replayer



Pragbot Replayer



The screenshot shows a Pragbot Replayer window with a log of game actions. The log contains 113 lines of text, with the 103rd line highlighted. The actions include moving players between cells and chat messages.

```
80 Player 2, 38070: MOVE_PLAYER_CELL18,18,19,20
81 Player 2, 38513: MOVE_PLAYER_CELL18,18,18,19
82 Player 2, 39229: MOVE_PLAYER_CELL18,18,17,18
83 Player 2, 39764: MOVE_PLAYER_CELL18,18,16,17
84 Player 2, 40207: MOVE_PLAYER_CELL18,18,15,16
85 Player 2, 40577: MOVE_PLAYER_CELL18,18,14,15
86 Player 2, 40946: MOVE_PLAYER_CELL18,18,13,14
87 Player 2, 41225: MOVE_PLAYER_CELL17,18,13,13
88 Player 2, 41424: MOVE_PLAYER_CELL17,17,12,13
89 Player 2, 41759: MOVE_PLAYER_CELL17,17,11,12
90 Player 2, 42533: MOVE_PLAYER_CELL17,17,10,11
91 Player 2, 42601: MOVE_PLAYER_CELL17,17,9,10
92 Player 2, 43404: MOVE_PLAYER_CELL17,17,8,9
93 Player 2, 43783: MOVE_PLAYER_CELL17,17,9,8
94 Player 2, 44214: MOVE_PLAYER_CELL17,17,10,9
95 Player 2, 44318: MOVE_PLAYER_CELL16,17,10,10
96 Player 2, 44495: MOVE_PLAYER_CELL17,16,10,10
97 Player 2, 44614: MOVE_PLAYER_CELL17,17,11,10
98 Player 2, 45133: MOVE_PLAYER_CELL17,17,10,11
99 Player 2, 46513: MOVE_PLAYER_CELL17,17,11,10
100 Player 2, 48016: MOVE_PLAYER_CELL16,17,11,11
101 Player 2, 50951: MOVE_PLAYER_CELL16,16,10,11
102 Player 2, 50974: MOVE_PLAYER_CELL17,16,10,10
103 Player 2, 51522: MOVE_PLAYER_CELL17,17,9,10
104 Player 2, 52517: MOVE_PLAYER_CELL17,17,10,9
105 Player 2, 52805: MOVE_PLAYER_CELL17,17,11,10
106 Player 2, 53081: MOVE_PLAYER_CELL16,17,11,11
107 Player 2, 53984: MOVE_PLAYER_CELL17,16,11,11
108 Player 2, 55335: BOLD_MESSAGEThe game is in chat mode. Click 'Game Mode' to unpause the game.
109 Player 2, 55335: ENTER_CHAT_MODE
110 Player 2, 57369: PLAYER_IS_TYPING
111 Player 2, 111485: CHAT_MESSAGE_PREFIXCommander I have found a badguy in the south most room. How should I p
112 Player 1, 122678: PLAYER_IS_TYPING
113 Player 1, 156952: CHAT_MESSAGE_PREFIXJR I am on my way, please guard the exit while I come find him.
```

Normal text file 5909 chars 6022 bytes 114 lines Ln:103 Col:44 Sel:0 (0 bytes) in 0 ranges UNIX ANSI INS

Future of Pragbot 2.1

- Transcript collection is still essential
- I've already tricked everyone I know into pilot games
- How can we collect lots and lots of transcripts?
- What are the research implications of a game like this?

Transcripts

- Server is still logging all conversations
 - And actions for replaying
- Chris Potts has already demonstrated the use of Mechanical Turk
- What about this version of Pragbot?

Serious Games

- Serious games are an increasingly popular research topic
- Pragbot has the ability to capture transcripts and replay games
- Scenarios, characters, maps, etc. can be easily recast to other situations
 - Mitch really wants to make a version with wizards and witches for middle school kids

Serious Games

- Lots of work to be done in both of these areas
- My goal is to get a bunch of transcripts collected by the end of the semester
- Hopefully this can be done in a creative way using the Turk

Website

- If you would like to try out Pragbot 2.1, you can go to the website and play a game
 - Plus we would love your transcript!
- <http://www.seas.upenn.edu/~muri/pragbot2.html>

Thanks!

- Demo
- Questions?