

Cobot in LambdaMOO: A Social Statistics Agent.

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Cobot

- Conversational Agent who lived in LambdaMOO.
- Statistical information
- Conversational agent – by information retrieval

LambdaMOO

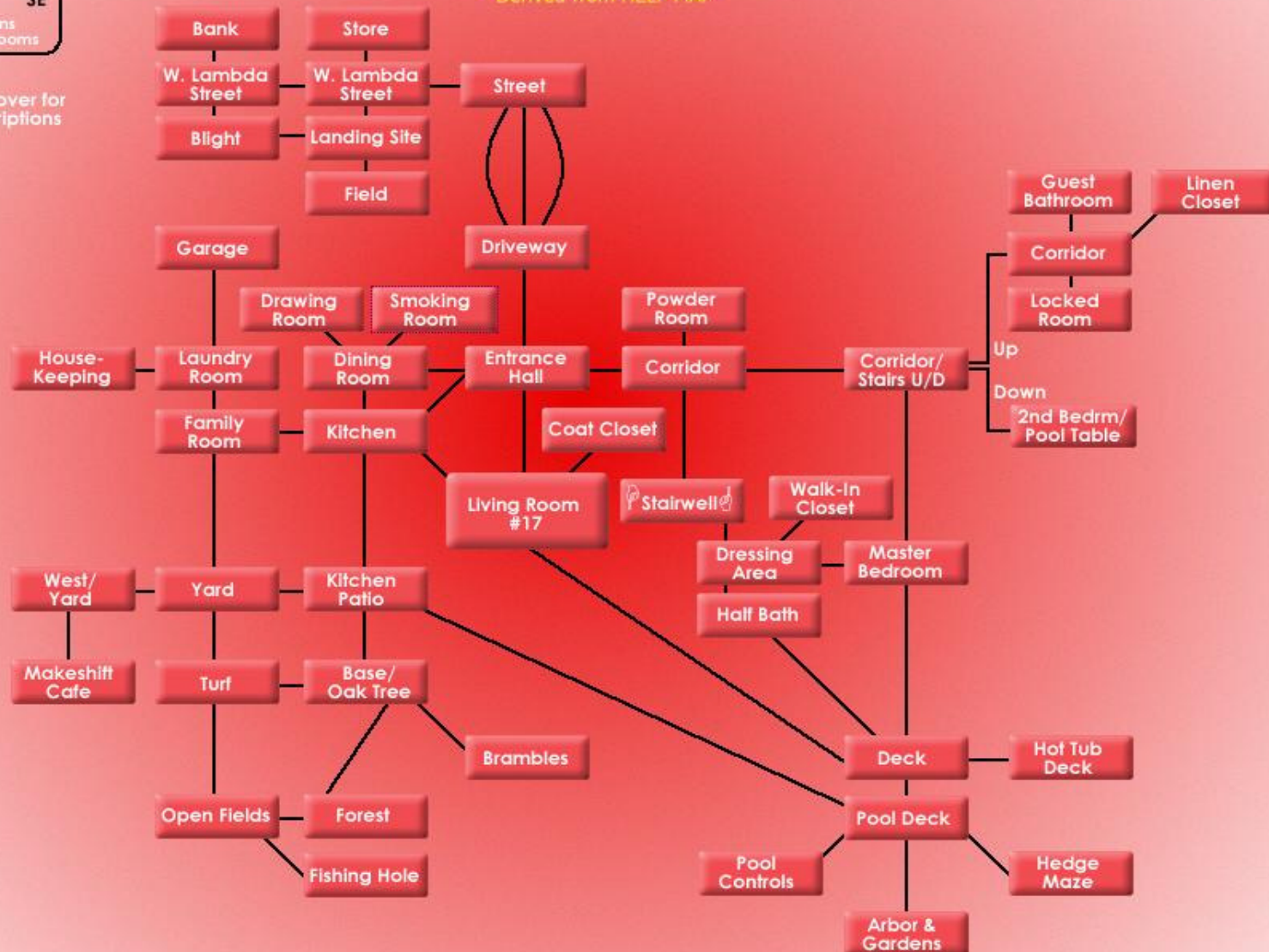
- MOO – MUD OO -> Multi User Dungeon that uses Object Oriented Language.
- Founded by Pavel Curtis – XEROX PARC in 1990.
- Represents a virtual world by a series of connected rooms.
- Not graphically programmed but has a text description that gives the look and feel.



Use mouse-over for room descriptions

LambdaMoo

House & Grounds*
 telnet://lambda.moo.mud.org:8888/
 Derived from HELP MAP



LambdaMOO

- Living room is described in this manner

It is very bright, open, and airy here, with large plate-glass windows looking southward over the pool to the gardens beyond. On the north wall, there is a rough stonework fireplace. The east and west walls are almost completely covered with large, well-stocked bookcases. An exit in the northwest corner leads to the kitchen and, in a more northerly direction, to the entrance hall. The door into the coat closet is at the north end of the east wall, and at the south end is a sliding glass door leading out onto a wooden deck. There are two sets of couches, one clustered around the fireplace and one with a view out the windows. You see Welcome Poster, a fireplace, the living room couch, Statue, The Birthday Machine, lag meter, and Cockatoo here.

philomath is here.

LambdaMOO

- We can Emote or send a message to anybody in the same room or other rooms.
- Users create rooms, objects and methods to handle those objects.
- Oldest and complex virtual world
- Markov Chainer, Dudley, Julia are other automated agents.

Cobot

- Built using Cobot platform.
- Appears as any other user.
- Lives in living room – most visited by guests and regulars.

Cobots Timeline

- Inanimate Object
- Statistical engine
- Conversationalist

Inanimate object

- Socially inept
- Answered a few questions
- Similar to a furniture
- Collected data

Statistical engine

- A histogram of verbs used by that user
- A histogram of verbs used on that user
- A histogram of users that have invoked it
- A histogram of users that have been its target
- A histogram of verbs used on each other by a couple of users

Example

HFh [to cobot]: relate me to Buster
cobot whispers, “Here are your relationships with Buster.
You like to use: - (62%), poke
(7%), hug (3%), eye (3%), nod (2%), hi5, h5, zap, comfort,
and grin on each other. Buster
is ranked #14 on your list of playmates. You are ranked #1 on
Buster’s list. Your socializing
overlap is 75.4% and your playmate overlap is 33.7%. Your
actions have a similarity of
95.9% but ignoring common speech verbs it’s 58.3%. Others
act on you with a similarity of
96.6% but ignoring common speech verbs it’s 81.9%.”

Interactions increased

- Improvements like ranking
- This had unexpected social consequences.
- Snow Crash [to Medb]: Cobot says you act like me. Stop.
- Medb cracks up laughing at Snow Crash!
- Medb [to Snow Crash]: How do you know it's not you acting like me?
- Medb tries to decide whether she or Snow Crash should feel more insulted....
- ...
- Gabaldon [to cobot]: loudly relate me to sparklebug
- cobot [to Gabaldon]: Here are your relationships with Sparklebug ... Sparklebug is ranked 7 on your list of playmates. You are ranked 19 on Sparklebug's list. ...
- Gabaldon [to Sparklebug]: I can't play with you so much anymore, you do realize. You don't like me nearly as much as I seem to like you.
- Gabaldon cries at Sparklebug.
- ...
- Spitboy has a new strategy. He stops by the Living Room, asks the cobot who's like him and if cobot tells him one of the people present is like him, he starts talking to them.
- Spitboy says, "I haven't caught anyone who's like me, yet."
- Spitboy [to Kimmy]: Shame, innit?
- Kimmy says, "sure."
- Kimmy [to cobot]: who is like me?

Chat and emote abilities of Cobot

- Users were provided statistics and they emoted.
- Cobot reciprocated accordingly.
- Program Several plausible replies to a given scenario and randomize between the responses.
 - Melon hugs cobot.
 - cobot hugs Melon warmly.
 - EyeBalls kisses cobot lightly.
 - cobot hugs EyeBalls warmly.
 - ...
 - cobot [to Ratman]: Welcome, special playmate of mine!
 - Ratman spits at cobot
 - cobot [to Ratman]: You'll be first up against the wall when the revolution comes.

Simple and Extended chat

- Simple conversations – general and specific.
- Recognition of users.
- killa [to cobot]: how old are you?
- cobot [to killa]: I am older than you think.
- lackluster [to cobot]: why are you carrying a shield?
- cobot [to lackluster]: I think many of the dumber MOOers think I'm a garbage can.

Extended chat

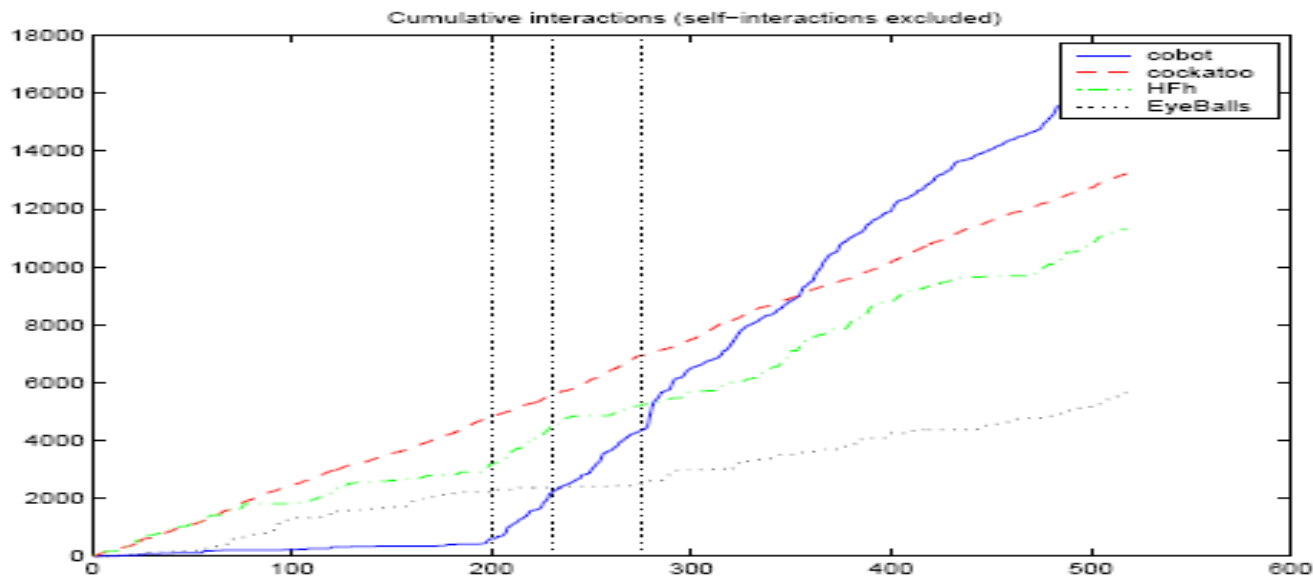
- Rather than the canned responses cobot read from online documents.
- These documents were large.
- Specific and recognizable
- Entertaining and Conversational

Extended chat

- Non statistical queries were processed in this manner.
- Words in the incoming utterance are matched to words appearing in sentences in the documents, assigning to each sentence a weight based on the number of matching words.
- A minimum length on the words matched provides a parameter that can adjust the difficulty of matching sentences in each document independently.
- If no match is found, the utterance is handled by one of the mechanisms mentioned earlier; (randomly chosen from canned responses)
- otherwise, with a (large) fixed probability Cobot randomly chooses a sentence to utter according to the distribution defined by the weights.

Continued

- Right documents were chosen and the response was immediate and dramatic.



Examples:

- Technicolor Guest [to cobot]: What's your religion?
- cobot [to Technicolor Guest]: technology unless you REALLY believe in that religion yourself and find that it arouses a deep, strong, genuine response in many other people.
- cobot [to HFh]: The modern individual on the other hand is threatened by many things against which he is helpless; nuclear accidents, carcinogens in food, environmental pollution, war, increasing taxes, invasion of his privacy by large organizations, nation-wide social or economic phenomena that may disrupt his way of life.
- HFh [to cobot]: I agree with that position, I suppose, but it doesn't help to explain the lack of a safety net.
- cobot [to HFh]: Nevertheless, the position can be defended.
- HFh [to cobot]: ...in the *short* term only.
- cobot nods to HFh.

Contd..

- Responses not always appropriate
- But can be appropriate most of the time and amusing to entertain users.
- Documents can be swapped
- But limited number of documents to bring out themes in cobot's conversation.

Privacy and social issues

- Privacy important in LambdaMOO
- Cobot notes events only in his presence
- Whispers answers.
- It also has a silence verb
- But users can make him spam by repeatedly querying him aloud.
- So explicit measures were taken.

Conclusion

- Cobot has become very popular
- Users make use of his statistical services.
- Mixed reviews – spam, services.
- Still experimenting with re-enforcement learning.
- Change the environment without degrading it.