

Soaring to New Platforms

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iSoar



Soar on the iPhone OS

Updated instructions on the wiki

- Soar 9.3.0 release + XCode + 5 minutes
- Need a developer's license to install on devices

Learning Demo

Motivation

Game AI improves based upon experience with a human player

3x3 Tic-Tac-Toe (~2 days)

- RL rules condition upon state of board and all possible next moves
- Reward on notification of win/loss/tie

tictactoe



Load **existing** RL rules

```
source rl.soar
```



tictactoe



Set (2,2) = opponent

Reflect input-link via SML

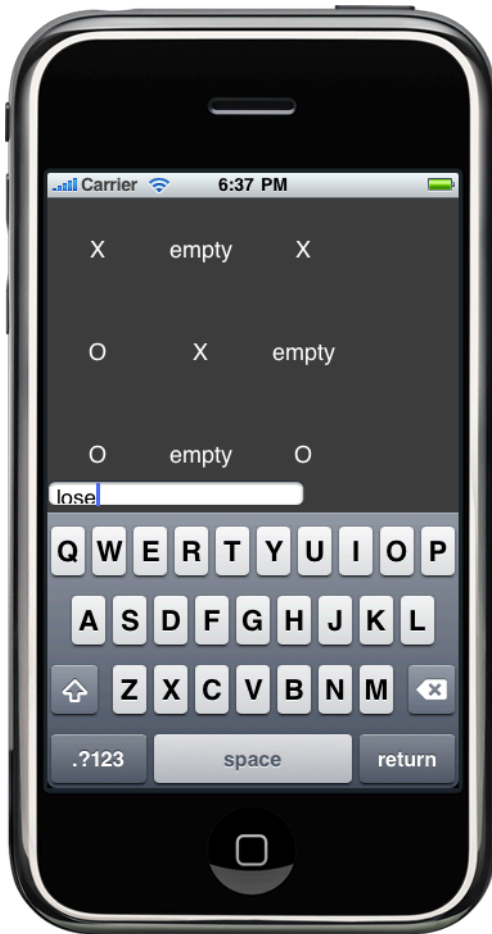
RunSelfTilOutput

Capture agent position via
output-link

tictactoe



tictactoe



Send new state and “lose”



Run till HALT

Save RL Rules

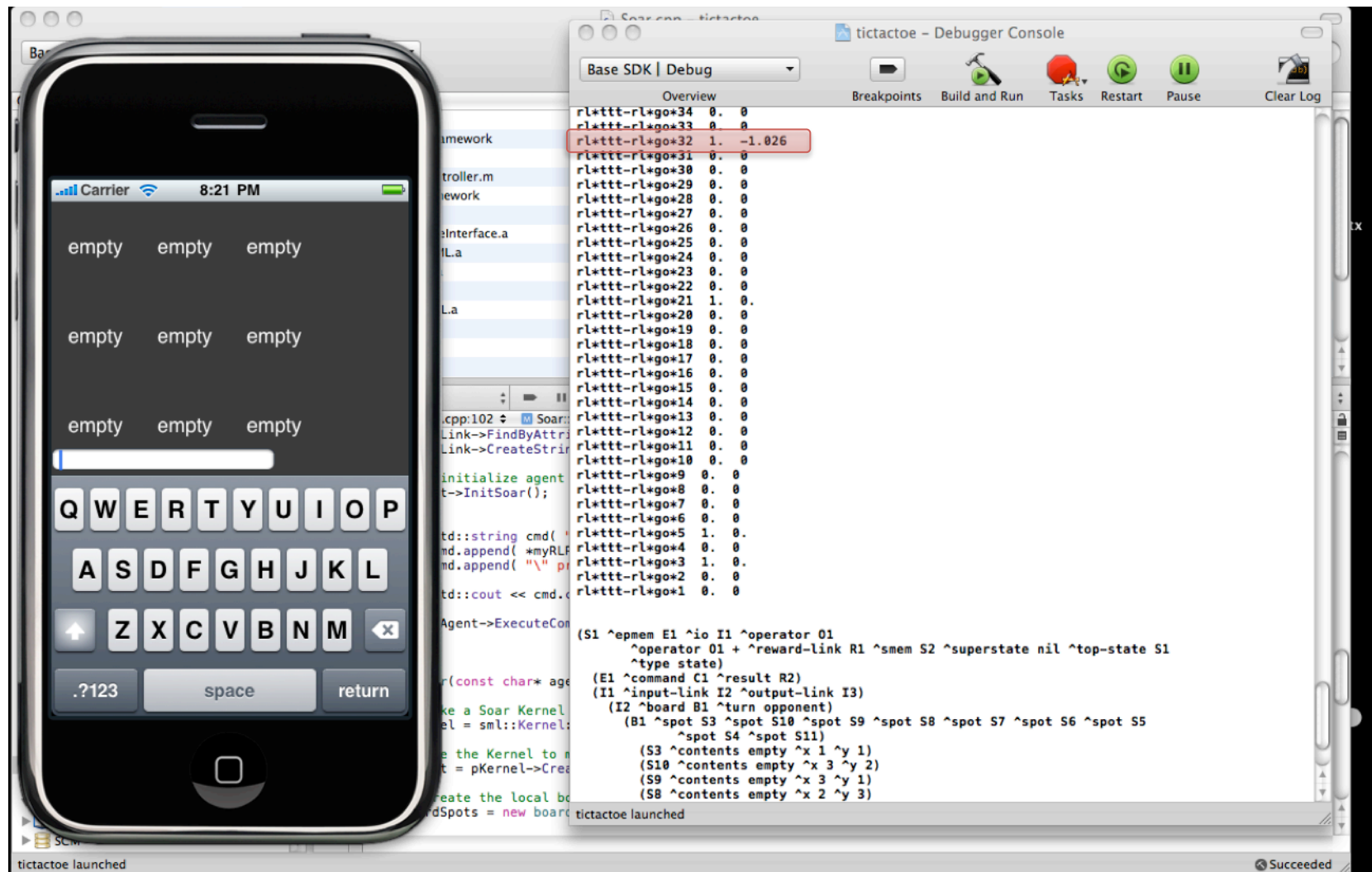
```
ctf rl.soar p --rl --full
```

InitSoar

tictactoe

better, faster, smarter





RESTfulSoar

The screenshot shows a Facebook group page for 'RESTfulSoar'. The page layout includes a top navigation bar with 'Profile', 'Friends', 'Networks', and 'Inbox'. The left sidebar contains a search bar and links to 'Photos', 'Notes', 'Groups', 'Events', and 'Posted Items'. The main content area is divided into sections: 'Information' (Group Info, Contact Info), 'Photos', 'Discussion Board', 'Members', 'The Wall', 'Related Groups', 'Group Type', and 'Admins'. The 'Information' section shows the group name 'RESTfulSoar', type 'Human-Level AI', and description 'We enjoy reacting and deliberating'. The 'Contact Info' section lists an email address 'soar-group@lists.sourceforge.net' and a website 'http://soar.googlecode.com'. The 'Photos' section states 'No one has uploaded any photos. Add photos.' The 'Discussion Board' section states 'There are no discussions. Start the first topic.' The 'Members' section shows 5 members: James Blumer, James Foster, Michelle Bushby, Jeanie Lin, and Jonathan Fan. The 'The Wall' section displays a post by James Foster (Durham) at 10:46pm, saying 'Welcome to facebook.' The 'Related Groups' section lists several groups including 'Barack Obama for President in 2008', 'Student Groups - Political Groups', 'NACURH, Inc.', 'Student Groups - Dorms & Residences', 'PACURH', 'Formosa Foundation Kickass Ambassadors', 'Common Interest - Beliefs & Causes', 'From Japanese to Greek, from Urdu to Swahili...The languages group', and 'Common Interest - Languages'. The 'Group Type' section indicates 'This is an open group. Anyone can join and invite others to join.' The 'Admins' section lists 'Jonathan Fan (creator)'.

facebook Profile edit Friends Networks Inbox home account privacy logout

RESTfulSoar Global

Search

Photos Notes Groups Events Posted Items

Is anyone missing? Complete your friend list.

USC Flyer

COME LIVE IN AVALON APTS

The new management has reduced the rent by \$150-\$300, because they NEED to find tenants. Let me know if you want to live here and I'll split the referral fee w/ you and answer any questions you have.

Posted by Tyler Villaseñor [create | see all]

Share

Information edit

Group Info

Name: RESTfulSoar

Type: Human-Level AI

Description: We enjoy reacting and deliberating

Contact Info

Email: soar-group@lists.sourceforge.net

Website: http://soar.googlecode.com

City: Ann Arbor, MI

Photos

No one has uploaded any photos. Add photos.

Discussion Board

There are no discussions. Start the first topic.

Members edit

This group has 5 members. See All

James Blumer James Foster Michelle Bushby Jeanie Lin Jonathan Fan

The Wall

Displaying 1 wall post. Write Something | See All

James Foster (Durham) wrote at 10:46pm

Welcome to facebook.

Message - Report - Delete

Message All Members

Edit Group Profile

Edit Group Members

Edit Group Officers

Invite People to Join

Create Related Event

Leave Group

Share

Related Groups

Barack Obama for President in 2008

Student Groups - Political Groups

NACURH, Inc.

Student Groups - Dorms & Residences

PACURH

Student Groups - Dorms & Residences

Formosa Foundation Kickass Ambassadors

Common Interest - Beliefs & Causes

From Japanese to Greek, from Urdu to Swahili...The languages group

Common Interest - Languages

Group Type edit

This is an open group. Anyone can join and invite others to join.

Admins

Jonathan Fan (creator)

Soar on the Web

Liar's Dice

- Representational State Transfer (REST)
- Model-View-Controller (MVC)

Game State



Rules (Model)



Server (Controller)



Resource (View)

| Name | Cup | Pushed |
|----------------|-----|--------|
| SoarBot (3) | (4) | |
| SoarTester (3) | (5) | |

Current Bid: 1 1
Unknown Dice: 4
Timer: 50 (start)

Actions

- ☐ Bid
- ☐ Challenge
- ☐ Exact
- ☐ Pass

Messages

Round History

- SoarBot bid 1 1

Current State

SoarBot (1, 4)

SoarTester [1, 1, 2, 3, 3, 4]

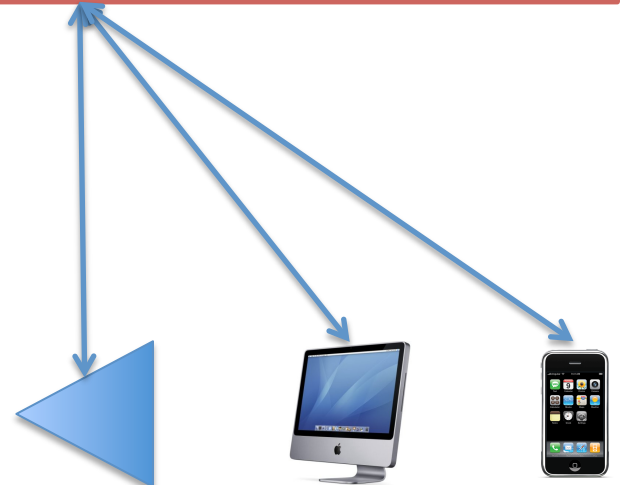
Current Bid 1 1

Unknown Dice 4

Actions

- ☐ Bid
- ☐ Challenge

HTTP REQUEST: GAME 5



Clients



Current State

| Name | Cup | Pushed |
|----------------|-----|--------|
| SoarBot (3) | (4) | |
| SoarTester (3) | [5] | |

Current Bid: 1 1
Unknown Dice: 4
Timer: 10 (start)

Actions

- ☐ Bid 's
- ☒ Challenge
- ☐ Exact
- ☐ Pass

Messages

Round History

- SoarBot **bid** 1 1

Game History

- round 1: SoarBot **challenged** SoarTester and **failed**
action: bid (3 3's)
SoarBot: 1, 2, 3, 5, 5
SoarTester: 1, 2, 3, 3, 5

```
Terminal — bash — 156x40
bash
macsoar:bin niderbin$ java -cp ../ini4j-0.5.1.jar:../sml.jar SoarDice 66 ../agents/dice.soar
Enter user:
Enter password:*****
Error: Error binding the listener socket to its port number
Failed to create the internet listener socket. Shutting down listener thread.
Checking at 2010-05-13 20:36:20 ... nothing new.
Checking at 2010-05-13 20:36:20 ... wake!
Checking at 2010-05-13 20:36:20 ... nothing new.
Checking at 2010-05-13 20:36:30 ... nothing new.
Checking at 2010-05-13 20:36:40 ... wake!
Checking at 2010-05-13 20:36:40 ... wake!
Checking at 2010-05-13 20:36:40 ... wake!
Checking at 2010-05-13 20:36:40 ... wake!
Checking at 2010-05-13 20:36:40 ... nothing new.
Checking at 2010-05-13 20:36:50 ... nothing new.
Checking at 2010-05-13 20:37:00 ... nothing new.
```

Stats

- Games: 0/7 (0%)
- Challenges: 5/21 (23%)
- Exacts: 2/5 (40%)



Info

E-Mail: [laird](#)

Stats

- Games: 9/23 (39%)
- Challenges: 55/95 (57%)
- Exacts: 7/20 (35%)

Initial Issues

- HTTP is stateless
 - SML translator must detect changes in state or flood Soar's WM with deltas
- Notification model
 - Currently pull (vs. push)

Evaluation

Nuggets

- Inspirational Soar demos on the iPhone OS and Web

Coal

- Soar is lonely out there on strange new platforms