

Curiosity Driven Deep Reinforcement Learning

What You Will Learn In This Course

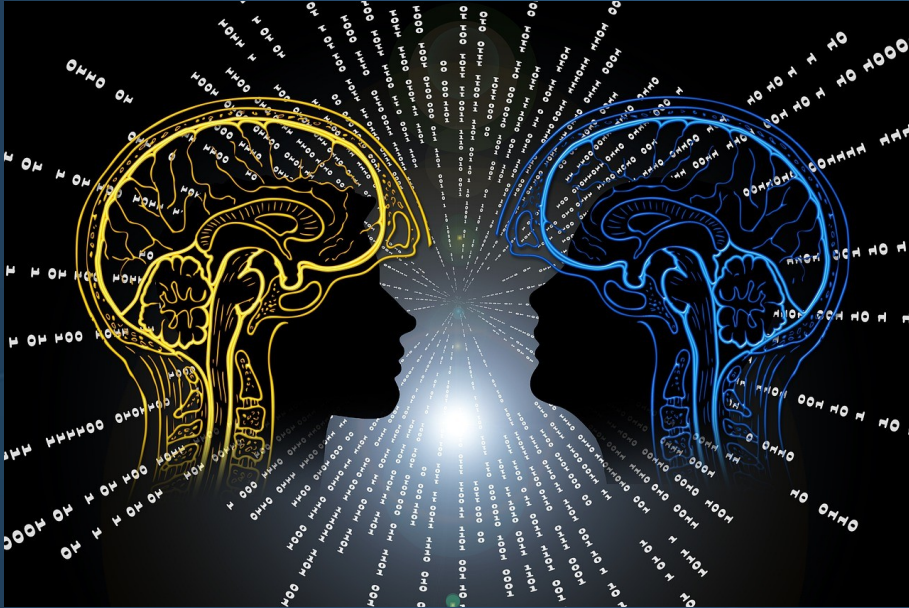
Why Curiosity Is Important



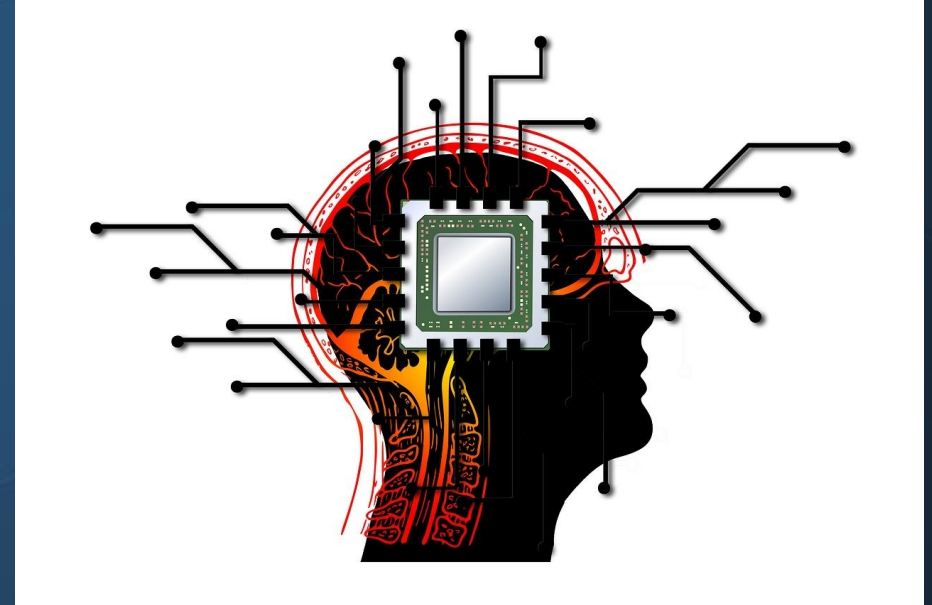
How can we learn from sparse rewards?

This is a cutting edge topic... who is this course for?

Who This Course Is For



Familiar w/ Actor Critic



Code Deep NN

Command of Python language (list comp., classes, etc.)

Course Structure

```
File Edit View Bookmarks Settings Help
38 class ActorCritic(nn.Module):
39     def __init__(self, input_dims, n_actions, gamma=0.99, tau=1.0):
40         super(ActorCritic, self).__init__()
41
42         self.gamma = gamma
43         self.tau = tau
44
45         self.conv1 = nn.Conv2d(input_dims[0], 32, 3, stride=2, padding=1)
46         self.conv2 = nn.Conv2d(32, 32, 3, stride=2, padding=1)
47         self.conv3 = nn.Conv2d(32, 32, 3, stride=2, padding=1)
48         self.conv4 = nn.Conv2d(32, 32, 3, stride=2, padding=1)
49
50         conv_shape = self.calc_conv_output(input_dims)
51         self.gru = nn.GRUCell(conv_shape, 256)
52         self.pi = nn.Linear(256, n_actions)
53         self.v = nn.Linear(256, 1)
54
55     def forward(self, state, hx):
56         conv = F.elu(self.conv1(state))
57         conv = F.elu(self.conv2(conv))
58         conv = F.elu(self.conv3(conv))
59         conv = F.elu(self.conv4(conv))
60         conv_state = conv.view((conv.size()[0], -1))
61
62         hx = self.gru(conv_state, (hx))
63         pi = self.pi(hx)
```

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ICM : vim

Review of actor critic methods (theory & code)

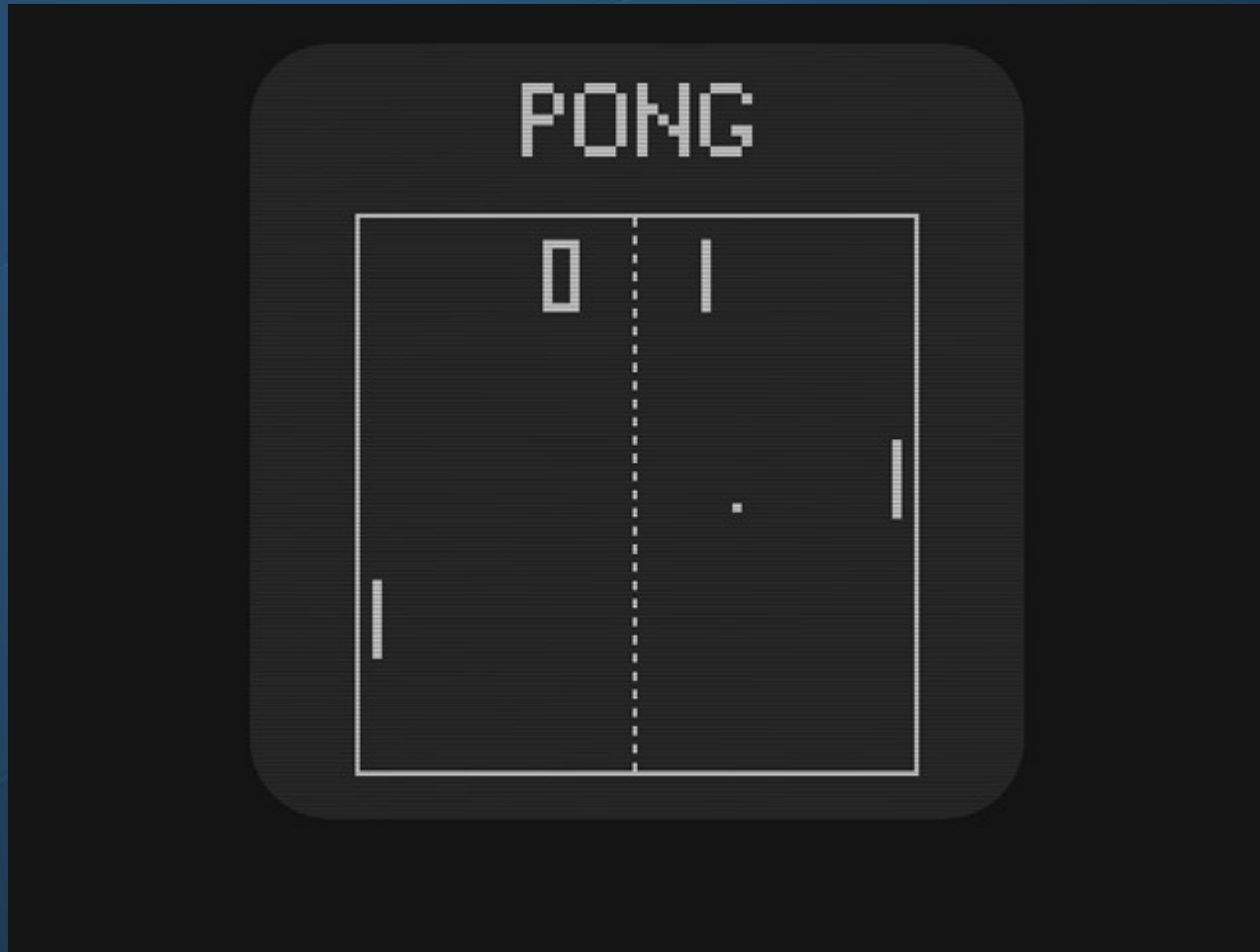
What You Will Learn



Framework for Implementing Papers

Lecture before reading paper to increase accessibility

What You Will Learn



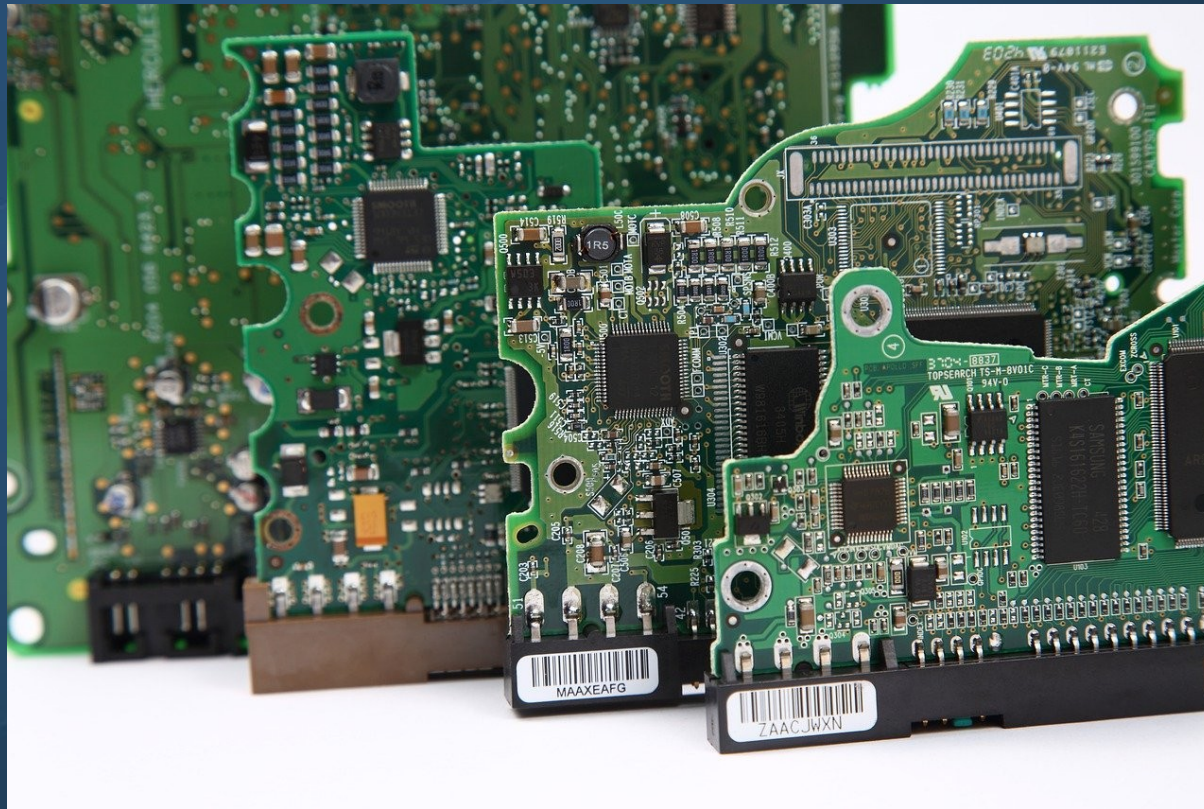
Modifying the Open AI gym

What You Will Learn



Parallel computation

What You Will Learn



ICM: Bolt-on module for RL algorithms

Focus on Fundamentals



Practice coding best practices

What You Will Learn

- How to read and implement papers
- How to modify the Open AI Gym
- How to implement A3C
- How to implement ICM for any algorithm

Up Next

