## **Default Question Block**

## Survey of Common Challenges in Development of Deep Reinforcement Learning (DRL) Applications

Your email address (optional)
What is your current job title?  Developer, Researcher, (For students, please indicate the degree: PhD student, Master)
What is your overal work/research experience with Deep Reinforcement Learning (DRL)?
Which programming languages have you been using to develope DRL applications?
C/C++, Java, Python,
Which frameworks have you been using to develope DRL applications? Tensorflow, keras, PyTorch, Keras-rl, Python-rl,

We are concluded with 5 high-level common challenges in DRL development including 1) DRL basic knowledge, 2) DRL library/framework usage, 3) parallel processing & multi-threading, 4) DL knowledge, and 5) general programming issues.

Have you ever encountered challenges related to DRL basic knowledge?

			How severe was the challenge/issue			How much effort was required to handle this challenge/issue		
	Yes	No	Minor	Major	Critical	Low	Medium	High
Comprehension Challenges in basic knowledge of DRL, such as the needed components in the DRL application.	0	0	0	0	0	0	0	0
Reward Challenges in engineering/configuring reward functions	0	0	0	0	0	0	0	0
Action Challenges in defining action of DRL algorithm	0	0	0	0	0	0	0	0
Environment Challenges in customizing environments.	0	0	0	0	0	0	0	0
<b>Hyperparameters</b> Challenges in identifying/tuning hyperparameters in DRL application like exploration issues, learning rate, Epsilon decay, etc.	0	0	0	0	0	0	0	0
<b>Design problem</b> Challenges in designing a DRL algorithm for a new problem	0	0	0	0	0	0	0	0
<b>Policy</b> Challenges in defining and configuring Policy of DRL algorithm.	0	0	0	0	0	0	0	0
State/Observation Challenges in handling states and/or observations	0	0	0	0	0	0	0	0

Have you ever encountered challenges related to DRL library/framework usage?

			How severe was the challenge/issue			How much effort was required to handle this challenge/issue			
	Yes	No	Minor	Major	Critical	Low	Medium	High	
Installation Challenges regarding installing/uninstalling relevant libraries/frameworks and issues which can be raised during installation.	0	0	0	0	0	0	0	0	
<b>Dependency</b> challenges regarding mismatched versions of installed libraries. For example, when the version of installed openai-gym is not compatible with Python.	0	0	0	0	0	0	0	0	

			How severe was the challenge/issue			How much effort was required to handle this challenge/issue		
	Yes	No	Minor	Major	Critical	Low	Medium	High
API usage Challenges about the usage of arguments, attributes, methods, etc. of the DRL framework's API.	0	0	0	0	0	0	0	0
<b>Documentation</b> When people want to use a feature of an DRL library/framework, but there is no documentation about it.	0	0	0	0	0	0	0	0
Bugs inside framworks Challenges which are related to the identified bugs inside DRL framework.	0	0	0	0	0	0	0	0
Best fitted library for a special task When the developer is unsure about the best DRL library/framework for a special DRL algorithm/task.	0	0	0	0	0	0	0	0

Have you ever encountered challenges related to parallel processing & multi-threading?

				severe w allenge/is		How much effort was required to handle this challenge/issue		
	Yes	No	Minor	Major	Critical	Low	Medium	High
GPU usage Challenges regarding utilizing GPU for running DRL applications	0	0	0	0	0	0	0	0
<b>Multi-threading</b> Challenges about running DRL applications as a multi-threading software	0	0	0	0	0	0	0	0
Multi-processing Challenges in running DRL applications in a multi-processing maner.	0	0	0	0	0	0	0	0
<b>Distributed systems</b> Challenges in running DRL applications as a distributed systems.	0	0	0	0	0	0	0	0

Have you ever encountered challenges related to DL knowledge?

			How severe was the challenge/issue			How much effort was required to handle this challenge/issue		
	Yes	No	Minor	Major	Critical	Low	Medium	High
<b>Model</b> Challenges regarding DL model including model's layer, activation function, load/save model, etc.	0	0	0	0	0	0	0	0
Data preprocessing Challenges in preparing data to train the DL model with.	0	0	0	0	0	0	0	0
<b>DL framework</b> Challenges about usage of DL frameworks in DRL applications.	0	0	0	0	0	0	0	0
Have you ever encountered any challenges/issues related to DRL t you please describe them?	that ha	ave no	ot been	mentior	ned in this	s surve	y? If yes,	could
Any other comments:								
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