============Start Ensemble Strategy============

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======Model training from: 20090000 to 20151002.0

======A2C Training========

Training time (A2C): 0.6168310085932414 minutes

======A2C Validation from: 20151002.0 to 20160104.0

A2C Sharpe Ratio: -inf

======PPO Training========

Training time (PPO): 2.081088650226593 minutes

======PPO Validation from: 20151002.0 to 20160104.0

PPO Sharpe Ratio: 0.165495579248726

======DDPG Training========

Training time (DDPG): 0.45730974276860553 minutes

======DDPG Validation from: 20151002.0 to 20160104.0

======Trading from: 20160104.0 to 20160405.0

previous\_total\_asset:1000000

end\_total\_asset:1244350.271368

total\_reward:244350.27136799996

total\_cost: 998.9966320000001

total trades: 62

Sharpe: 0.5809032357438022

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======Model training from: 20090000 to 20160104.0

======A2C Training========

Training time (A2C): 0.6013388514518738 minutes

======A2C Validation from: 20160104.0 to 20160405.0

A2C Sharpe Ratio: 0.5800652167973304

======PPO Training========

Training time (PPO): 2.097796599070231 minutes

======PPO Validation from: 20160104.0 to 20160405.0

PPO Sharpe Ratio: 0.5795188997733673

======DDPG Training========

Training time (DDPG): 0.4573776920636495 minutes

======DDPG Validation from: 20160104.0 to 20160405.0

======Trading from: 20160405.0 to 20160705.0

previous\_total\_asset:1244350.271368

end\_total\_asset:1113903.359368

total\_reward:-130446.91200000001

total\_cost: 0.0

total trades: 62

Sharpe: -0.21413203472547443

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======Model training from: 20090000 to 20160405.0

======A2C Training========

Training time (A2C): 0.6051981608072917 minutes

======A2C Validation from: 20160405.0 to 20160705.0

A2C Sharpe Ratio: -0.18623336840529783

======PPO Training========

Training time (PPO): 2.029881564776103 minutes

======PPO Validation from: 20160405.0 to 20160705.0

PPO Sharpe Ratio: -inf

======DDPG Training========

Training time (DDPG): 0.45502079327901207 minutes

======DDPG Validation from: 20160405.0 to 20160705.0

======Trading from: 20160705.0 to 20161003.0

previous\_total\_asset:1113903.359368

end\_total\_asset:1080680.0019241304

total\_reward:-33223.35744386958

total\_cost: 941.9836588557129

total trades: 10

Sharpe: -0.3926799142507139

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======Model training from: 20090000 to 20160705.0

======A2C Training========

Training time (A2C): 0.6183887243270874 minutes

======A2C Validation from: 20160705.0 to 20161003.0

A2C Sharpe Ratio: 0.05407117188413662

======PPO Training========

Training time (PPO): 2.1113079746564227 minutes

======PPO Validation from: 20160705.0 to 20161003.0

PPO Sharpe Ratio: -0.007560280939196137

======DDPG Training========

Training time (DDPG): 0.4697955091794332 minutes

======DDPG Validation from: 20160705.0 to 20161003.0

======Trading from: 20161003.0 to 20170103.0

previous\_total\_asset:1080680.0019241304

end\_total\_asset:1026627.3344416472

total\_reward:-54052.6674824832

total\_cost: 3159.779509277894

total trades: 62

Sharpe: -0.1415287432499105

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======Model training from: 20090000 to 20161003.0

======A2C Training========

Training time (A2C): 0.6339099923769633 minutes

======A2C Validation from: 20161003.0 to 20170103.0

A2C Sharpe Ratio: -0.15421429021264565

======PPO Training========

Training time (PPO): 2.09980552593867 minutes

======PPO Validation from: 20161003.0 to 20170103.0

PPO Sharpe Ratio: -0.1273592833958306

======DDPG Training========

Training time (DDPG): 0.4637461264928182 minutes

======DDPG Validation from: 20161003.0 to 20170103.0

======Trading from: 20170103.0 to 20170404.0

previous\_total\_asset:1026627.3344416472

end\_total\_asset:1024934.4932899139

total\_reward:-1692.8411517333006

total\_cost: 0.0

total trades: 62

Sharpe: 0.0076798328500893385

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======Model training from: 20090000 to 20170103.0

======A2C Training========

Training time (A2C): 0.6031561692555746 minutes

======A2C Validation from: 20170103.0 to 20170404.0

A2C Sharpe Ratio: -inf

======PPO Training========

Training time (PPO): 2.072889272371928 minutes

======PPO Validation from: 20170103.0 to 20170404.0

PPO Sharpe Ratio: -0.056558138786146246

======DDPG Training========

Training time (DDPG): 0.4650232950846354 minutes

======DDPG Validation from: 20170103.0 to 20170404.0

======Trading from: 20170404.0 to 20170705.0

previous\_total\_asset:1024934.4932899139

end\_total\_asset:978343.1461156704

total\_reward:-46591.34717424342

total\_cost: 5089.425681724184

total trades: 62

Sharpe: -0.221313313330683

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======Model training from: 20090000 to 20170404.0

======A2C Training========

Training time (A2C): 0.6146498918533325 minutes

======A2C Validation from: 20170404.0 to 20170705.0

A2C Sharpe Ratio: -0.23736796543810915

======PPO Training========

Training time (PPO): 2.0561219692230224 minutes

======PPO Validation from: 20170404.0 to 20170705.0

PPO Sharpe Ratio: -inf

======DDPG Training========

Training time (DDPG): 0.4617999315261841 minutes

======DDPG Validation from: 20170404.0 to 20170705.0

======Trading from: 20170705.0 to 20171003.0

previous\_total\_asset:978343.1461156704

end\_total\_asset:976493.6000573158

total\_reward:-1849.5460583546665

total\_cost: 320.4698289160156

total trades: 62

Sharpe: 0.00597491983227397

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======Model training from: 20090000 to 20170705.0

======A2C Training========

Training time (A2C): 0.6152150591214498 minutes

======A2C Validation from: 20170705.0 to 20171003.0

A2C Sharpe Ratio: -0.18384662485280068

======PPO Training========

Training time (PPO): 2.0750210722287497 minutes

======PPO Validation from: 20170705.0 to 20171003.0

PPO Sharpe Ratio: -0.13021037321200463

======DDPG Training========

Training time (DDPG): 0.46373064517974855 minutes

======DDPG Validation from: 20170705.0 to 20171003.0

======Trading from: 20171003.0 to 20180103.0

previous\_total\_asset:976493.6000573158

end\_total\_asset:1000305.778103199

total\_reward:23812.178045883193

total\_cost: 0.0

total trades: 62

Sharpe: 0.10549622218006445

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======Model training from: 20090000 to 20171003.0

======A2C Training========

Training time (A2C): 0.6066725254058838 minutes

======A2C Validation from: 20171003.0 to 20180103.0

A2C Sharpe Ratio: -inf

======PPO Training========

Training time (PPO): 2.0744449655214945 minutes

======PPO Validation from: 20171003.0 to 20180103.0

PPO Sharpe Ratio: 0.05228026021399681

======DDPG Training========

Training time (DDPG): 0.46818652550379436 minutes

======DDPG Validation from: 20171003.0 to 20180103.0

======Trading from: 20180103.0 to 20180405.0

previous\_total\_asset:1000305.778103199

end\_total\_asset:952114.4653912926

total\_reward:-48191.31271190639

total\_cost: 0.0

total trades: 62

Sharpe: -0.14391073041167998

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======Model training from: 20090000 to 20180103.0

======A2C Training========

Training time (A2C): 0.6109175244967143 minutes

======A2C Validation from: 20180103.0 to 20180405.0

A2C Sharpe Ratio: 0.18990485499502324

======PPO Training========

Training time (PPO): 2.0688341577847797 minutes

======PPO Validation from: 20180103.0 to 20180405.0

PPO Sharpe Ratio: -0.21728262808966667

======DDPG Training========

Training time (DDPG): 0.4581977963447571 minutes

======DDPG Validation from: 20180103.0 to 20180405.0

======Trading from: 20180405.0 to 20180705.0

previous\_total\_asset:952114.4653912926

end\_total\_asset:944781.4498063945

total\_reward:-7333.015584898065

total\_cost: 1180.374429296608

total trades: 15

Sharpe: -0.1433293070727221

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======Model training from: WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014023A8E0C8>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014023A8E0C8>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014021226CC8>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014021226CC8>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014023B29708>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014023B29708>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014022769408>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014022769408>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014022765F88>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014022765F88>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140253AAA48>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140253AAA48>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140253AAA48>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140253AAA48>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001402539AE08>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001402539AE08>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x000001402539AE08>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x000001402539AE08>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001402539AE08>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001402539AE08>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014029B0A3C8>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014029B0A3C8>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001402275C088>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001402275C088>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014023C7F308>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014023C7F308>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140227339C8>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140227339C8>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140227339C8>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140227339C8>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014023C7F3C8>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014023C7F3C8>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014022765F88>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014022765F88>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014023C7F3C8>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014023C7F3C8>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014023C7F3C8>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014023C7F3C8>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140213B0548>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140213B0548>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014029A9D248>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014029A9D248>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014028D27C08>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014028D27C08>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140213B0A08>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140213B0A08>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014028D27C08>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014028D27C08>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014021C0A108>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014021C0A108>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014024F79F88>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014024F79F88>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x00000140283B98C8>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x00000140283B98C8>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014023D26788>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014023D26788>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014026359F88>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014026359F88>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014026359F88>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014026359F88>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014028D45BC8>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014028D45BC8>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014028D45BC8>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014028D45BC8>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014020FDE9C8>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014020FDE9C8>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014026368C08>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014026368C08>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014026368C08>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014026368C08>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014025C3F708>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014025C3F708>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014020FDEA08>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014020FDEA08>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001407A424348>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001407A424348>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001407A424348>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001407A424348>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001407E564848>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001407E564848>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014020FD6648>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014020FD6648>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014026349948>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014026349948>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001407E564848>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x000001407E564848>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014023B3A688>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014023B3A688>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014020FDEA08>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Flatten.call of <tensorflow.python.layers.core.Flatten object at 0x0000014020FDEA08>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014020FD6648>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014020FD6648>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014026378D88>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x0000014026378D88>>: AttributeError: module 'gast' has no attribute 'Index'

WARNING:tensorflow:Entity <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140219DF188>> could not be transformed and will be executed as-is. Please report this to the AutgoGraph team. When filing the bug, set the verbosity to 10 (on Linux, `export AUTOGRAPH\_VERBOSITY=10`) and attach the full output. Cause: converting <bound method Dense.call of <tensorflow.python.layers.core.Dense object at 0x00000140219DF188>>: AttributeError: module 'gast' has no attribute 'Index'

20090000 to 20180405.0

======A2C Training========

Training time (A2C): 0.6090652863184611 minutes

======A2C Validation from: 20180405.0 to 20180705.0

A2C Sharpe Ratio: -inf

======PPO Training========

Training time (PPO): 2.0359056909879047 minutes

======PPO Validation from: 20180405.0 to 20180705.0

PPO Sharpe Ratio: -inf

======DDPG Training========

Training time (DDPG): 0.46094395716985065 minutes

======DDPG Validation from: 20180405.0 to 20180705.0

======Trading from: 20180705.0 to 20181003.0

previous\_total\_asset:944781.4498063945

end\_total\_asset:1053959.9506013948

total\_reward:109178.50079500023

total\_cost: 943.834705

total trades: 62

Sharpe: 0.42886375074949495

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======Model training from: 20090000 to 20180705.0

======A2C Training========

Training time (A2C): 0.6036936680475871 minutes

======A2C Validation from: 20180705.0 to 20181003.0

A2C Sharpe Ratio: 0.400321127155754

======PPO Training========

Training time (PPO): 2.0485702315966288 minutes

======PPO Validation from: 20180705.0 to 20181003.0

PPO Sharpe Ratio: -inf

======DDPG Training========

Training time (DDPG): 0.4780645728111267 minutes

======DDPG Validation from: 20180705.0 to 20181003.0

======Trading from: 20181003.0 to 20190104.0

previous\_total\_asset:1053959.9506013948

end\_total\_asset:1205361.0526013947

total\_reward:151401.10199999996

total\_cost: 0.0

total trades: 62

Sharpe: 0.34266993989274713

Ensemble Strategy took: 37.87754185199738 minutes