Regularized:

5 game
```
Number of finished trials: 9
normalized_5_game_average_final.csv
Best trial:
  Value: 0.650877833366394
  Params:
    hidden_size: 55
    activation_function: tanh
    optimization_algorithm: RMSprop
    lr: 8.722600009363246e-06
```

10 game
```
Number of finished trials: 14
normalized_10_game_average_final.csv
Best trial:
  Value: 0.6387057900428772
  Params:
    hidden_size: 7
    activation_function: tanh
    optimization_algorithm: RMSprop
    lr: 4.4715478915999416e-05
```

15 game

Unregularized:

5 game
```
normalized_5_game_average_final.csv
Best trial:
  Value: 0.6473149061203003
  Params:
    hidden_size: 20
    activation_function: relu
    optimization_algorithm: Adagrad
    lr: 0.009243669372333955
```

10 game

```
Number of finished trials: 12
normalized_10_game_average_final.csv
Best trial:
   Value: 0.6351419687271118
   Params:
      hidden_size: 16
      activation_function: relu
      optimization_algorithm: Adadelta
      lr: 0.08035152784055917
```

15 game

```
Number of finished trials: 9
normalized_15_game_average_final.csv
Best trial:
   Value: 0.636203944683075
   Params:
      hidden_size: 3
      activation_function: sigmoid
      optimization_algorithm: Adamax
      lr: 0.01565822053436934
```

10 game regularized -> PC right
15 game regularized -> PC left

5 game unregularized -> PC
train: 0.6350985075028136 0.6486660838127136
valid: 0.6591142538207181 0.6092843413352966
test: 0.6450711424650107 0.611111104883728
train: 0.6367121381931994 0.6435025930404663

valid: 0.6392049556544025 0.6324951648712158
test: 0.6452084511060809 0.6187894940376282
train: 0.641169047704457 0.6361876130104065
valid: 0.602374786449816 0.6866537928581238
test: 0.645496213931486 0.6242095828056335
train: 0.6383372042552534 0.6409208178520203
valid: 0.6255710127275271 0.6402320861816406
test: 0.6452886098768653 0.6187894940376282
train: 0.6371692999710109 0.6407057046890259
valid: 0.6357473743722794 0.6441006064414978
test: 0.6448906526009888 0.6174345016479492
train: 0.6375708930874034 0.6428571343421936
valid: 0.6339662706828901 0.6382978558540344
test: 0.6451300263081786 0.6224029064178467
train: 0.6411947514637407 0.6387693881988525
valid: 0.6139332535649638 0.6866537928581238
test: 0.6472981436465813 0.621047854423523
train: 0.6366177238203368 0.6417813897132874
valid: 0.6425638014389422 0.6382978558540344
test: 0.6453260672770864 0.6178861856460571
train: 0.6406701761658549 0.6383390426635742
valid: 0.6144682299237648 0.6731141209602356
test: 0.6465979784915549 0.619692862033844
train: 0.6378729435745082 0.6400602459907532
valid: 0.6687725562191563 0.6092843413352966
test: 0.6471027644669137 0.618337869644165

10 game unregularized
train: 0.6245532249214317 0.6533992886543274
valid: 0.6301101529160136 0.655705988407135
test: 0.6292674927530573 0.6445347666740417
train: 0.6241382863148149 0.6516781449317932
valid: 0.6262386678727038 0.6421663165092468
test: 0.6272863592774134 0.640921413898468
train: 0.6275391306811479 0.6480206251144409
valid: 0.635142043088806 0.6479690670967102
test: 0.6330362489445315 0.6364046931266785
train: 0.6241381812629109 0.6525387167930603
valid: 0.6389967120131856 0.6266924738883972
test: 0.6278660612916128 0.6386630535125732
train: 0.6260920054120575 0.6488812565803528
valid: 0.6137496005866238 0.6576402187347412
test: 0.6283176784162168 0.6431797742843628
train: 0.6270676323961267 0.647375226020813

valid: 0.6015068663849822 0.6576402187347412
test: 0.6277709607617104 0.6413730978965759
train: 0.6254398339586701 0.6490963697433472
valid: 0.6139518887208094 0.6576402187347412
test: 0.6272149225991377 0.6391147375106812
train: 0.6240372163293284 0.6536144614219666
valid: 0.634747923803975 0.6441006064414978
test: 0.628707082344803 0.6418247222900391
train: 0.6266009422875107 0.6497418284416199
valid: 0.6112542477521029 0.6499032974243164
test: 0.627653990388455 0.640921413898468
train: 0.6263254186885492 0.6508175730705261
valid: 0.6231994430608399 0.634429395198822
test: 0.6291735099583138 0.640921413898468

15 game unregularized
train: 0.6256366159747677 0.6512478590011597
valid: 0.6202416731264421 0.6653771996498108
test: 0.6288610295659266 0.6445347666740417
train: 0.6239297857793391 0.653184175491333
valid: 0.6280251490078305 0.6402320861816406
test: 0.6278130930075262 0.6427280902862549
train: 0.6274255464901818 0.651462972164154
valid: 0.6066808112585337 0.6711798906326294
test: 0.6284507957254322 0.6391147375106812
train: 0.622673658413649 0.6527538895606995
valid: 0.6477169352988902 0.6266924738883972
test: 0.6274286518251992 0.6386630535125732
train: 0.6258259325347546 0.651462972164154
valid: 0.609470180547445 0.6402320861816406
test: 0.6276011408290674 0.6463414430618286
train: 0.6240634069282709 0.6540447473526001
valid: 0.6274836343538369 0.6441006064414978
test: 0.6275886965422557 0.640921413898468
train: 0.6253938094268773 0.645654022693634
valid: 0.6176928322135364 0.6634429693222046
test: 0.6278817236908083 0.6404697299003601
train: 0.6236623523567711 0.6551204919815063
valid: 0.634941678213197 0.6363636255264282
test: 0.6274855152485924 0.6404697299003601
train: 0.624826845018876 0.6516781449317932
valid: 0.6175729632377625 0.6615086793899536
test: 0.6272370655362199 0.640921413898468

train: 0.6249938965254109 0.6499569416046143
valid: 0.6203132272919557 0.6479690670967102
test: 0.6281122460813272 0.642276406288147

5 game regularized
train: 0.6431888173656496 0.639845073223114
valid: 0.6195274247883367 0.655705988407135
test: 0.6490747345495353 0.6214995384216309
train: 0.6411967351391475 0.6411359906196594
valid: 0.6348180486109086 0.6518375277519226
test: 0.6485077935290315 0.6192411780357361
train: 0.6430614486003291 0.6374784708023071
valid: 0.6279882635323176 0.667311429977417
test: 0.6504502564587891 0.6205962300300598
train: 0.6717909982815872 0.5950946807861328
valid: 0.6976425398710387 0.5357833504676819
test: 0.6784007252070315 0.5799458026885986
train: 0.6405551206839885 0.6424268484115601
valid: 0.6456650586607839 0.6421663165092468
test: 0.648255294146792 0.619692862033844
train: 0.6402810715562095 0.6460843086242676
valid: 0.6452248692512512 0.624758243560791
test: 0.6489852924764749 0.618337869644165
train: 0.6406014719641352 0.641566276550293
valid: 0.6445403235101608 0.6441006064414978
test: 0.6491345491297308 0.6174345016479492
train: 0.6401400644582232 0.6422116756439209
valid: 0.6431225819560038 0.6421663165092468
test: 0.6483137595728915 0.6205962300300598
train: 0.6387513852365662 0.6437177062034607
valid: 0.6671514391207373 0.6266924738883972
test: 0.6488101053259452 0.6111111044883728
train: 0.6405026675706886 0.6432874202728271
valid: 0.6463009386505334 0.6266924738883972
test: 0.6480987881795716 0.6124660968780518

10 game regularized
train: 0.6254291590848191 0.6557658910751343
train: 0.6300107114491488 0.6533992886543274
train: 0.6276930184864957 0.6538295745849609
train: 0.6286678502974125 0.6527538895606995
train: 0.6262490294886538 0.6553356051445007

train: 0.62959495920322244 0.6523236036300659
train: 0.6253522048718753 0.656411349773407
train: 0.6266511168824621 0.650602400302887
train: 0.6309397486319025 0.6497418284416199
train: 0.6277408167950668 0.6525387167930603
valid: 0.6246343274642236 0.6692456603050232
valid: 0.6421191491748655 0.6382978558540344
valid: 0.6270628889709192 0.6576402187347412
valid: 0.6317840940255953 0.6537717580795288
valid: 0.6239723522842968 0.6324951648712158
valid: 0.6367334010983805 0.6382978558540344
valid: 0.6176532384735934 0.667311429977417
valid: 0.6461626315485809 0.6189554929733276
valid: 0.6367489662115071 0.6711798906326294
valid: 0.6120785168107289 0.6653771996498108
test: 0.6314487928943582 0.6404697299003601
test: 0.6314896750579359 0.6413730978965759
test: 0.6320491891350957 0.6377596855163574
test: 0.6316404346420406 0.6327913403511047
test: 0.63105164999992 0.6404697299003601
test: 0.632523171623871 0.6427280902862549
test: 0.6317591743632922 0.6413730978965759
test: 0.6327721282180193 0.6373080611228943
test: 0.630988654136227 0.640921413898468
test: 0.6342368849032402 0.6359530091285706

15 game regularized
train: 0.6231483817100525 0.6630808711051941
valid: 0.6266555190086365 0.6711798906326294
test: 0.626658022403717 0.6504064798355103
train: 0.6233358979225159 0.6602839827537537
valid: 0.6259366869926453 0.6711798906326294
test: 0.6267529726028442 0.652664840221405
train: 0.623001754283905 0.6643717885017395
valid: 0.626259446144104 0.6499032974243164
test: 0.6258513927459717 0.6558265686035156
train: 0.6246995329856873 0.6613597273826599
valid: 0.6151241064071655 0.6711798906326294
test: 0.626561164855957 0.6535682082176208
train: 0.6226884722709656 0.6617900133132935
valid: 0.6257159113883972 0.6499032974243164
test: 0.6258559226989746 0.6540198922157288
train: 0.6266440153121948 0.6579173803329468
valid: 0.6198926568031311 0.6634429693222046

test: 0.628683865070343 0.6481481194496155
train: 0.6230674386024475 0.6624354720115662
valid: 0.6403315663337708 0.6402320861816406
test: 0.6274385452270508 0.6535682082176208
train: 0.6239705681800842 0.6620051860809326
valid: 0.623622715473175 0.6615086793899536
test: 0.6269401907920837 0.6522132158279419
train: 0.622414767742157 0.6615749001502991
valid: 0.6306186318397522 0.6576402187347412
test: 0.6264517307281494 0.6508581638336182
train: 0.626615583896637 0.658993124961853
valid: 0.6167527437210083 0.6750483512878418
test: 0.628900945186615 0.6472448110580444