COMP / ELEC / STAT 502 Pizza Points

Pizza Points earned for various things, outside competition
Yiliang (Ian) Fan for discovering error in eq. (5.28)

Details of competition points
Color codes: Red = 1 point, Blue = 0.5 point Groups in { } are tied

HW04 Part I

HW04 P2 Best fit to 1/x on test data
Group 4: Alex Teich, Grant Lu, Kevin Clark, Jason Dennis
Group 3: Pencheng Hong, Shuai Jia, Yidi Yang, Zhenwei Feng
Group 2: Wangsheng Xu, Sibo Li, Jiang Lin, Hao Zhang

HW04 P2 Best fit to 1/x on test data
Group 3: Pencheng Hong, Shuai Jia, Yidi Yang, Zhenwei Feng
Group 4: Alex Teich, Grant Lu, Kevin Clark, Jason Dennis
Group 7: Kun Cao, Yiliang Fan, Yuxiao Liang

HW04 P3 Best fit to 1/x on test data
Group 7: Kun Cao, Yiliang Fan, Yuxiao Liang
Group 5: Jon Clegg, John Potthoff, Fatih Yilmaz
Group 3: Pencheng Hong, Shuai Jia, Yidi Yang, Zhenwei Feng

HW04 P3 Shortest training with same good fit to 1/x on test data
Group 5: Jon Clegg, John Potthoff, Fatih Yilmaz
Group 1: Xinrui Dai, Jing Wang, Hongriu Wei
Group 2: Sibo Li, Jiang Lin, Wangsheng Xu, Hao Zhang

HW04 P4 Best classification accuracy on iris test data
Group 3: Pencheng Hong, Shuai Jia, Yidi Yang, Zhenwei Feng
{Group 1: Xinrui Dai, Jing Wang, Hongriu Wei
Group 2: Sibo Li, Jiang Lin, Wangsheng Xu, Hao Zhang
Group 5: Jon Clegg, John Potthoff, Fatih Yilmaz
Group 6: Xinghao Huang, Tiancheng Jiang, Mingke Ma, Haoyu Wang
Group 7: Kun Cao, Yiliang Fan, Yuxiao Liang }

HW04 P4 Smallest network achieving >95% classification accuracy on iris test data
Group 3: Pencheng Hong, Shuai Jia, Yidi Yang, Zhenwei Feng
Group 2: Sibo Li, Jiang Lin, Wangsheng Xu, Hao Zhang
Group 7: Kun Cao, Yiliang Fan, Yuxiao Liang

Quiz1

Scores above 90%, in descending order of score
Fatih Yilmaz
Scores between 75 - 90%, in descending order of score
Hao Zhang, John Potthoff, {Kevin Clark, Jon Clegg, Xinrui Dai, Zhenwei Feng, Sibo Li, Grant Lu, Mingke Ma, Haoyu Wang, Jing Wang, Wangsheng Xu, Yujie Zhao}

HW05

HW05 P1 Best average classification accuracy

<table>
<thead>
<tr>
<th>Group</th>
<th>Members</th>
<th>Test Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Xinghao Huang, Tiancheng Jiang, Mingke Ma, Haoyu Wang</td>
<td>97.77 %</td>
</tr>
<tr>
<td>7</td>
<td>Yiliang Fan</td>
<td>&gt;97 %</td>
</tr>
<tr>
<td>8</td>
<td>Qian Cao, Xingy Song, Yin Xiong, Yujie Zhao</td>
<td>96.83</td>
</tr>
</tbody>
</table>

HW05 P1 Most reliable classification with >90% accuracy

<table>
<thead>
<tr>
<th>Group</th>
<th>Members</th>
<th>STD</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Kun Cao, Jon Clegg, John Potthoff, Fatih Yilmaz</td>
<td>0.02</td>
</tr>
<tr>
<td>4</td>
<td>Alex Teich, Grant Lu, Kevin Clark, Jason Dennis</td>
<td>0.05</td>
</tr>
<tr>
<td>6</td>
<td>Xinghao Huang, Tiancheng Jiang, Mingke Ma, Haoyu Wang</td>
<td>0.66</td>
</tr>
</tbody>
</table>

HW05 P2.2 Best fit

Group 2: Sibo Li, Jiang Lin, Wangsheng Xu, Hao Zhang
Group 4: Alex Teich, Grant Lu, Kevin Clark, Jason Dennis
Group 5: Kun Cao, Jon Clegg, John Potthoff, Fatih Yilmaz

HW06

HW6 P2 Best accuracies (provided results were produced correctly)

{Group 1: Xinrui Dai, Jing Wang, Hongriu Wei}
{Group 4: Alex Teich, Grant Lu, Kevin Clark, Jason Dennis}
{Group 6: Xinghao Huang, Tiancheng Jiang, Mingke Ma, Haoyu Wang}
Group 7: Yiliang Fan
Group 2: Sibo Li, Jiang Lin, Wangsheng Xu, Hao Zhang

HW6 P2 Best documentation

Group 2: Sibo Li, Jiang Lin, Wangsheng Xu, Hao Zhang
No more ☹

HW07

HW7 P2 Best SOM learning (placement of prototypes in data space, four Gaussian clusters)

2D:
Group 5: Kun Cao, Jon Clegg, John Potthoff, Fatih Yilmaz
Group 3: Pencheng Hong, Shuai Jia, Yidi Yang, Zhenwei Feng
Group 7: Yiliang Fan
Group 2: Sibo Li, Jiang Lin, Wangsheng Xu, Hao Zhang

3D: no one did this 😊

HW7 P2 Fastest SOM convergence (of correct learning)

<table>
<thead>
<tr>
<th>Group</th>
<th>Members</th>
<th>Steps</th>
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</thead>
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<tr>
<td>8</td>
<td>Qian Cao, Xingy Song, Yin Xiong, Yujie Zhao</td>
<td>100,000 steps</td>
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<tr>
<td>3</td>
<td>Pencheng Hong, Shuai Jia, Yidi Yang, Zhenwei Feng</td>
<td>400,000 steps</td>
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<tr>
<td>4</td>
<td>Alex Teich, Grant Lu, Kevin Clark, Jason Dennis</td>
<td>550,000 steps</td>
</tr>
</tbody>
</table>

HW7 P2 Best SOM density maps

Group 8: Qian Cao, Xingy Song, Yin Xiong, Yujie Zhao
Group 3: Pencheng Hong, Shuai Jia, Yidi Yang, Zhenwei Feng
Group 1: Xinrui Dai, Jing Wang, Hongriu Wei
HW7 P3 Best visualization of cluster delineation in SOM
Group 3: Pencheng Hong, Shuai Jia, Yidi Yang, Zhenwei Feng
Group 1: Xinrui Dai, Jing Wang, Hongriu Wei
No more 😞 (See explanation in Announcement “HW07”.)

HW7 P4 Best cluster identification in SOM (iris)
Group 2: Sibo Li, Jiang Lin, Wangsheng Xu, Hao Zhang
Group 1: Xinrui Dai, Jing Wang, Hongriu Wei
No more 😞 (See explanation in Announcement “HW07”.)

HW7 P4 Best visualization of SOM’s knowledge (iris) [only layered representations are awarded points]
Group 3: Pencheng Hong, Shuai Jia, Yidi Yang, Zhenwei Feng
Group 5: Kun Cao, Jon Clegg, John Potthoff, Fatih Yilmaz
Group 1: Xinrui Dai, Jing Wang, Hongriu Wei

HW7 P5.b Best accuracies (provided results were produced correctly)
Group 6: Xinghao Huang, Tiancheng Jiang, Mingke Ma, Haoyu Wang 89.9%
Group 1: Xinrui Dai, Jing Wang, Hongriu Wei 88.8%
{Group 3: Pencheng Hong, Shuai Jia, Yidi Yang, Zhenwei Feng} 85.5%
Group 2: Sibo Li, Jiang Lin, Wangsheng Xu, Hao Zhang } 85.5%

Quiz2 -----------------------------------------------------------------------------------------
Scores above 90%, in descending order of score
Zhenwei Feng, Mingke Ma, Hao Zhang

Scores between 81 - 90%, in descending order of score
Jing Wang, Haoyu Wang, Shuai Jia, {Xinrui Dai, John Potthoff}, Yiliang Fan, Alex Teich

Exam1 ----------------------------------------------------------------------------------------

Exam1 P1 Best Tiger reconstruction
Learning efforts for equally good quality 4:1 compression / reconstruction are listed
(provided the # learn steps was clear in reporting of results). See the document Tiger-
compression_learning-efforts.2019 in Canvas Files/ for sample images.

Pizza Points: 3 for under 100K learn steps; 2 for under 250K learn steps; 1 for all others.

<table>
<thead>
<tr>
<th>Name</th>
<th># Learn Steps</th>
<th>On-line / Batch</th>
<th>Batch Size</th>
<th>Learning Rate</th>
<th>Momentum</th>
<th>Mean Abs. Diff.</th>
<th>Comment</th>
<th>PP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potthoff, John</td>
<td>56000</td>
<td>Batch</td>
<td>14</td>
<td>0.006 - &gt; 0.0006</td>
<td>0.8</td>
<td>2.34</td>
<td>scale to [-1,1]</td>
<td>3</td>
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<tr>
<td>Feng, Zhenwei</td>
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<td>Online</td>
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<td>0.03</td>
<td>0.7</td>
<td>2.59</td>
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<td>Online</td>
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<td>0.03</td>
<td>0.7</td>
<td>2.67</td>
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<td>Name</td>
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<td>Rarity</td>
<td>Purity</td>
<td>Value</td>
<td>Scale to</td>
<td>Notes</td>
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<td>Ma, Mingke</td>
<td>124080</td>
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<td>0.01</td>
<td>2.10</td>
<td>[-0.5,0.5]</td>
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<td>Batch</td>
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<td>0.003</td>
<td>0.5</td>
<td>2.23</td>
<td>[-1,1]</td>
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<tr>
<td>Lin, Jiang</td>
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<td>Batch</td>
<td>40</td>
<td>0.003</td>
<td>0.5</td>
<td>2.23</td>
<td>[-1,1]</td>
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<td>Li, Sibo</td>
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<td>Batch</td>
<td>40</td>
<td>0.005</td>
<td>0.5</td>
<td>2.37</td>
<td>scaling ?</td>
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<td>Xu, Wangsheng</td>
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<td>Batch</td>
<td>40</td>
<td>0.003</td>
<td>0.7</td>
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<td>0.7</td>
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<td>Wei, Hongrui</td>
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<td>1320</td>
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<td>Jia, Shuai</td>
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<td>Dai, Xinrui</td>
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<td>0.0005</td>
<td>0.7</td>
<td>2.49</td>
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<tr>
<td>Wang, Haoyu</td>
<td>660000</td>
<td>Batch</td>
<td>1320</td>
<td>0.5-&gt;0.15-&gt;0.01</td>
<td>2.21</td>
<td>scale to [0,0.2]</td>
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<td></td>
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<tr>
<td>Teich, Alex</td>
<td>1320000</td>
<td>Batch</td>
<td>1320</td>
<td>0.0001</td>
<td>0.9</td>
<td>2.06</td>
<td>scale to ~[-0.5,0.5]</td>
<td></td>
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</table>