

model_evaluation_visualisation

May 14, 2021

```
[1]: import os
import numpy as np
import pandas as pd
from matplotlib import pyplot as plt

RESULTS_DIR = '..\\..\\results\\CNN Training Results\\'
MODEL_NAMES = [
    'discard-cnn-45',
    'pon-cnn-54',
    'kan-cnn-23',
    'kita-cnn-32',
    'riichi-cnn-34'
]
```

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[2]: def load_data(path, file):
    csv_path = os.path.join(path, file)
    return pd.read_csv(csv_path, sep=',')
```

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[3]: df = {}

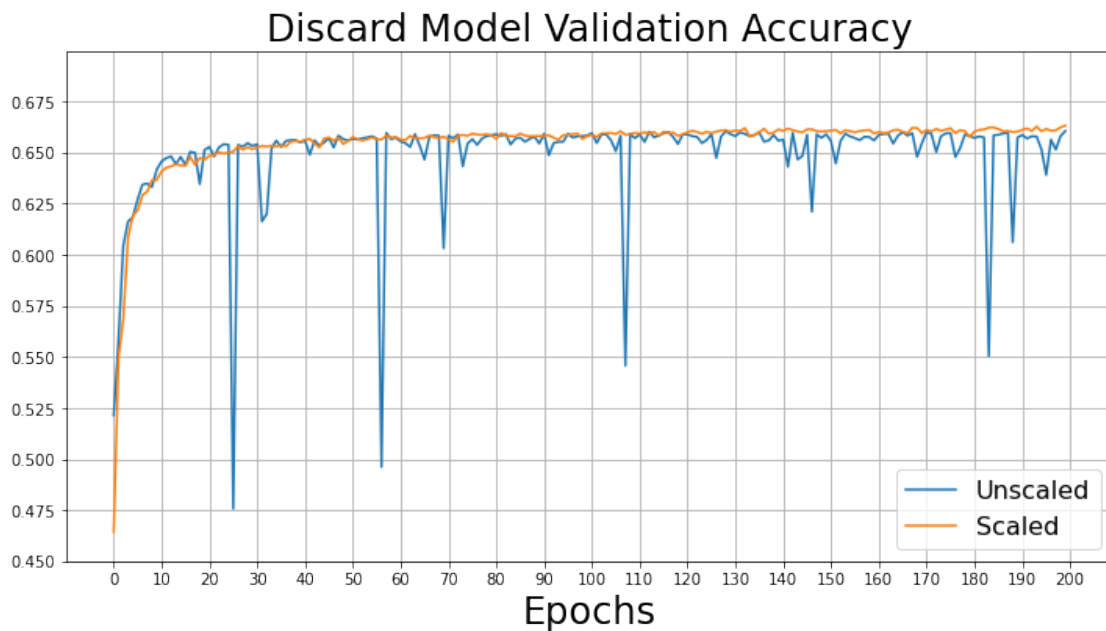
for model in MODEL_NAMES:
    csv_filename = model + '-validation-epoch-accuracy.csv'
    df[model] = load_data(RESULTS_DIR, csv_filename)
    model_scaled = model + '-scaled'
    csv_filename = model_scaled + '-validation-epoch-accuracy.csv'
    df[model_scaled] = load_data(RESULTS_DIR, csv_filename)
```

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[4]: plt.figure(figsize=(12, 6))
plt.ylim((0.45, 0.70))
plt.yticks(np.arange(0.45, 0.70, 0.025))
plt.xticks(np.arange(0, 201, 10))
plt.grid()

plt.plot(df['discard-cnn-45']['Step'], df['discard-cnn-45']['Value'],
        ↪label='Unscaled')
plt.plot(df['discard-cnn-45-scaled']['Step'],
        ↪df['discard-cnn-45-scaled']['Value'], label='Scaled')
```

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plt.title('Discard Model Validation Accuracy', fontsize=24)
plt.xlabel('Epochs', fontsize=24)
plt.legend(fontsize=16)

plt.savefig(".././././././Dissertation/figs/discard-validation-accuracy.png")
plt.show()
```

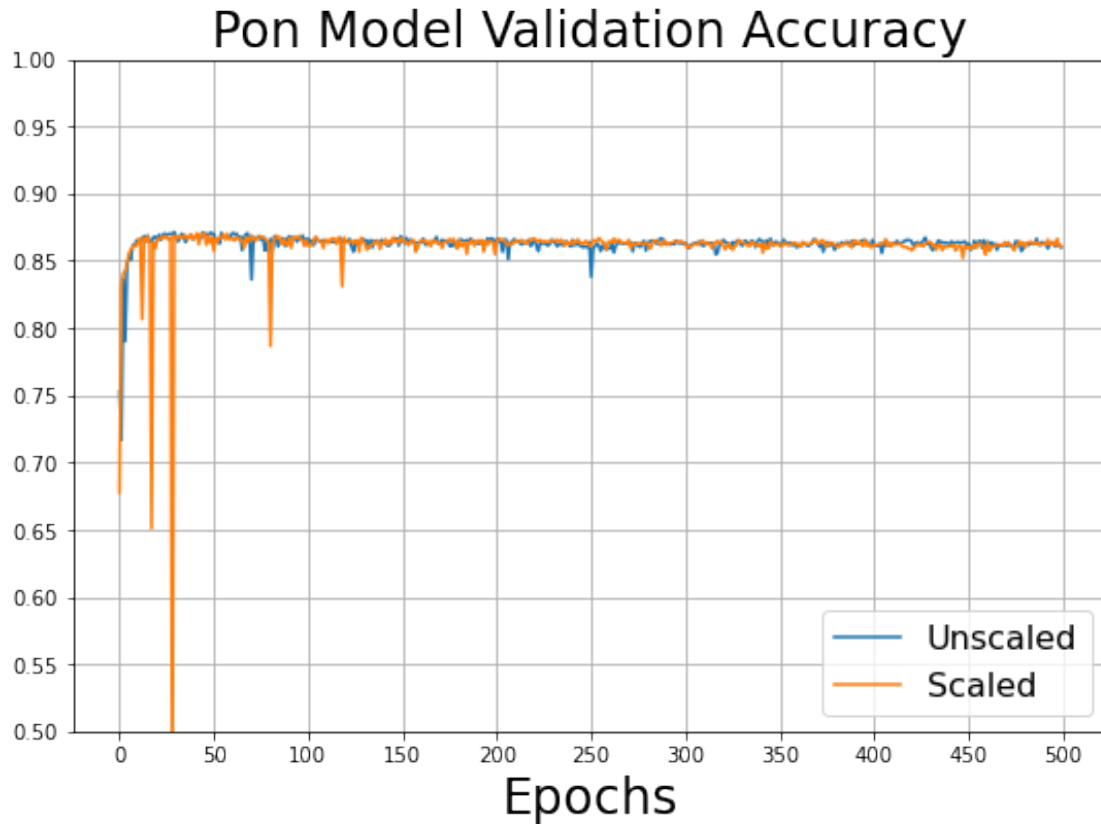


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[5]: plt.figure(figsize=(9, 6))
plt.ylim((0.5, 1))
plt.yticks(np.arange(0.5, 1.01, 0.05))
plt.xticks(np.arange(0, 510, 50))
plt.grid()

plt.plot(df['pon-cnn-54']['Step'], df['pon-cnn-54']['Value'], label='Unscaled')
plt.plot(df['pon-cnn-54-scaled']['Step'], df['pon-cnn-54-scaled']['Value'],
↪ label='Scaled')

plt.title('Pon Model Validation Accuracy', fontsize=24)
plt.xlabel('Epochs', fontsize=24)
plt.legend(fontsize=16, loc='lower right')

plt.savefig(".././././././Dissertation/figs/pon-validation-accuracy.png")
plt.show()
```

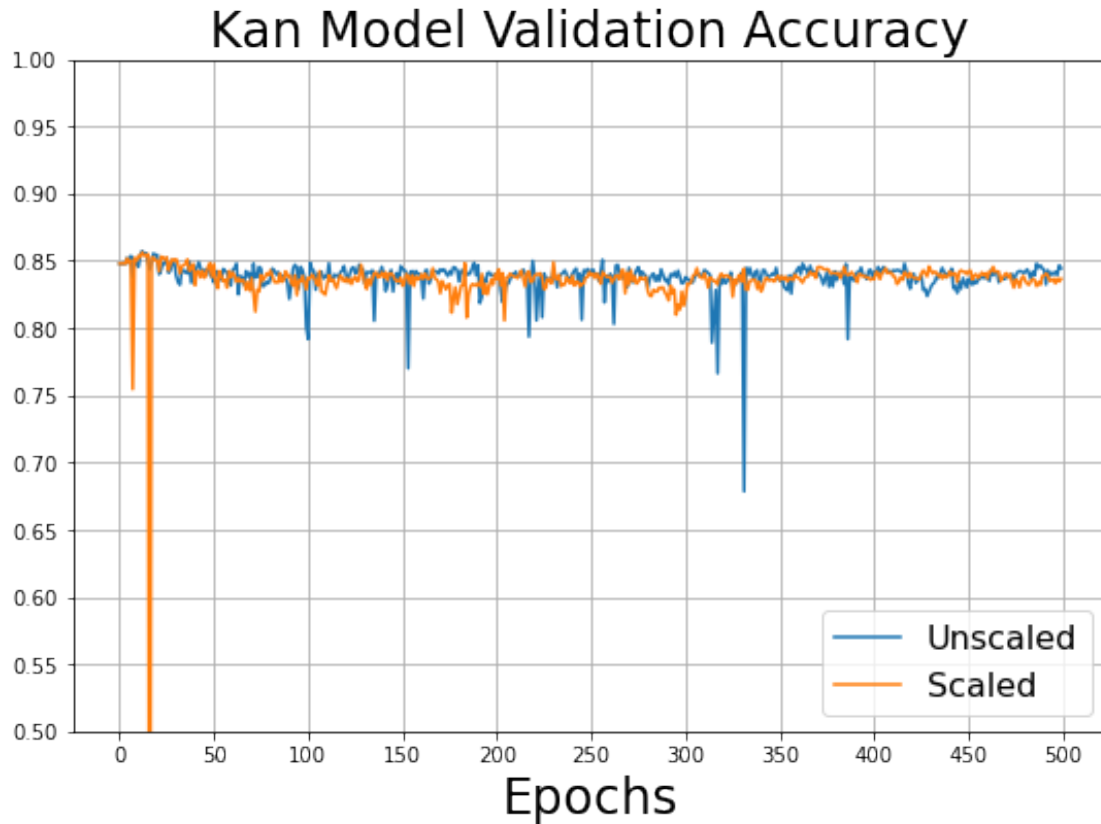


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[6]: plt.figure(figsize=(9, 6))
plt.ylim((0.5, 1))
plt.yticks(np.arange(0.5, 1.01, 0.05))
plt.xticks(np.arange(0, 510, 50))
plt.grid()

plt.plot(df['kan-cnn-23']['Step'], df['kan-cnn-23']['Value'], label='Unscaled')
plt.plot(df['kan-cnn-23-scaled']['Step'], df['kan-cnn-23-scaled']['Value'],
         label='Scaled')

plt.title('Kan Model Validation Accuracy', fontsize=24)
plt.xlabel('Epochs', fontsize=24)
plt.legend(fontsize=16, loc='lower right')

plt.savefig(".././.././../Dissertation/figs/kan-validation-accuracy.png")
plt.show()
```

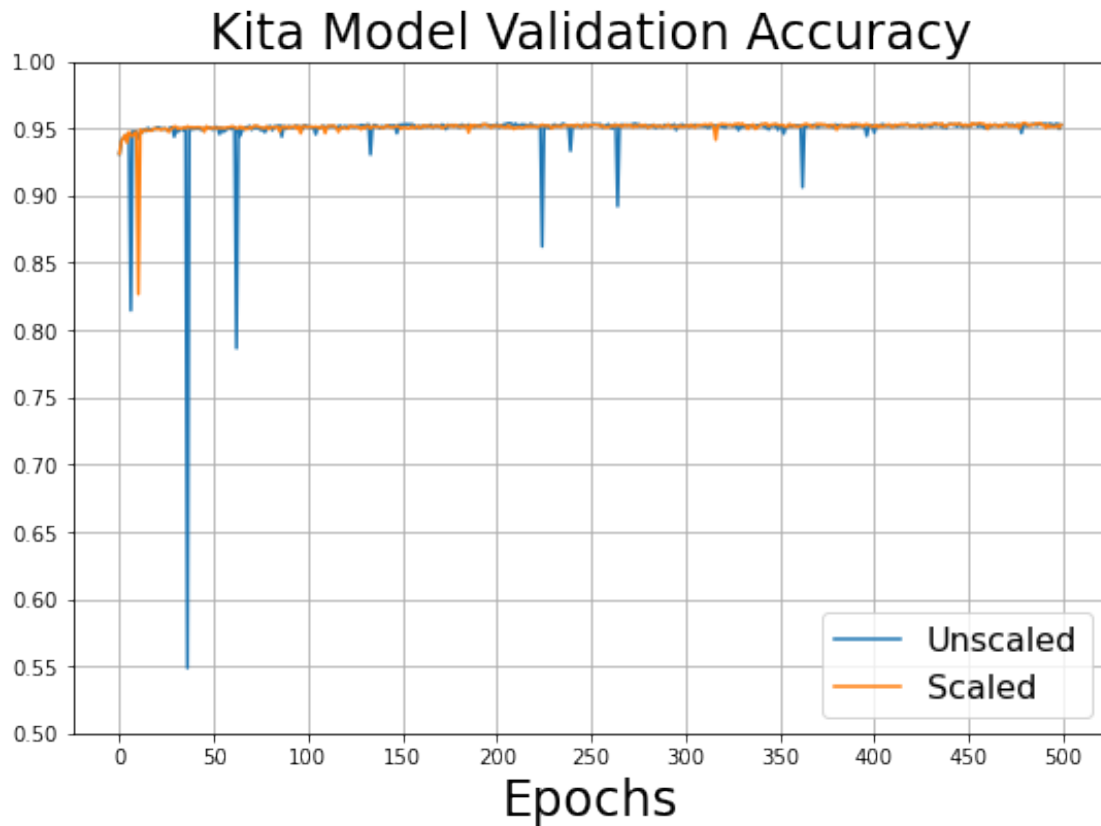


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[7]: plt.figure(figsize=(9, 6))
plt.ylim((0.5, 1))
plt.yticks(np.arange(0.5, 1.01, 0.05))
plt.xticks(np.arange(0, 510, 50))
plt.grid()

plt.plot(df['kita-cnn-32']['Step'], df['kita-cnn-32']['Value'],␣
        ↪label='Unscaled')
plt.plot(df['kita-cnn-32-scaled']['Step'], df['kita-cnn-32-scaled']['Value'],␣
        ↪label='Scaled')

plt.title('Kita Model Validation Accuracy', fontsize=24)
plt.xlabel('Epochs', fontsize=24)
plt.legend(fontsize=16)

plt.savefig("../Dissertation/figs/kita-validation-accuracy.png")
plt.show()
```



```
[8]: plt.figure(figsize=(9, 6))
plt.ylim((0.5, 1))
plt.yticks(np.arange(0.5, 1.01, 0.05))
plt.xticks(np.arange(0, 510, 50))
plt.grid()

plt.plot(df['riichi-cnn-34']['Step'], df['riichi-cnn-34']['Value'],□
        ↪label='Unscaled')
plt.plot(df['riichi-cnn-34-scaled']['Step'],□
        ↪df['riichi-cnn-34-scaled']['Value'], label='Scaled')

plt.title('Riichi Model Validation Accuracy', fontsize=24)
plt.xlabel('Epochs', fontsize=24)
plt.legend(fontsize=16, loc='lower right')

plt.savefig("../.../Dissertation/figs/riichi-validation-accuracy.png")
plt.show()
```

