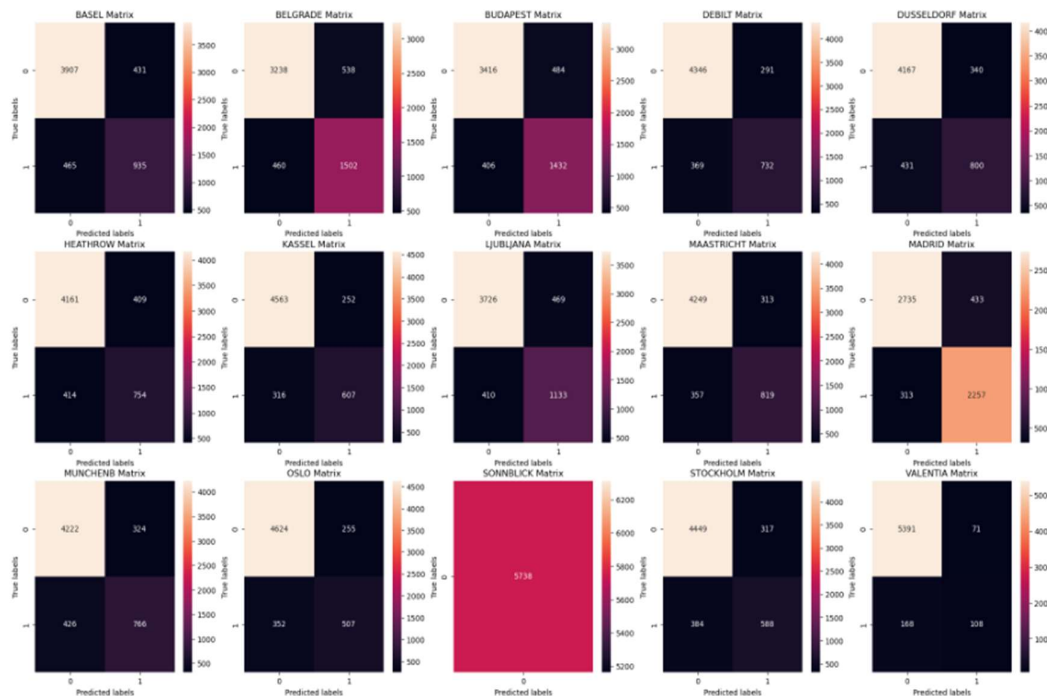


# Exercise 1.4: Supervised Learning Algorithms Part 1

## Timothy Aluko

Weather Station	Accurate predictions		False positive	False negative	Accuracy rate
Basel	3917	961	421	439	85%
Belgrade	3252	1544	524	418	84%
Budapest	3424	1462	476	376	85%
Debilt	4320	723	317	378	88%
Desseldorf	4164	810	343	421	87%
Heathrow	4138	744	432	424	85%
Kassel	4563	614	252	309	90%
Ljubljana	3740	1180	455	363	86%
Maastricht	4253	824	309	352	88%
Madrid	2750	2261	418	309	87%
Munchenb	4237	792	309	400	88%
Oslo	4637	512	242	347	90%
Sonnblick	5738	0	0	0	100%
Stockholm	4483	607	283	365	89%
Valentia	5404	74	50	202	96%
				Average	88%



The table presents an algorithm's performance in predicting weather data at various stations, focusing on accuracy rates, false positives, and false negatives. The average accuracy rate is

88%, indicating strong predictive performance. Sonnblick has the highest accuracy rate at 100%, suggesting a simpler climate pattern. However, overfitting is a concern, as the model is highly specific to Sonnblick's data. Madrid's data has a low number of accurate predictions and the highest false positive count, suggesting unique characteristics. High variability in climate data, stable weather patterns, and data consistency and station-specific factors can influence accuracy.

Also, Madrid and Belgrade exhibit the highest incidence of false positives, suggesting that these regions may possess more variable or complex weather patterns that the model fails to accurately capture. Conversely, stations exhibiting more stable climates, such as Kassel and Oslo (both achieving 90% accuracy), demonstrate greater predictability, presumably owing to reduced fluctuations in weather patterns.

Though some stations, like Madrid, may need more data preprocessing or adjustments, the algorithm is generally accurate. Sonnblick's perfect accuracy suggests overfitting, but stable climates at Kassel and Oslo improve model performance. Due to station accuracy variability, stations with less predictable weather may benefit from additional tuning or data adjustments to improve model reliability.