

# **Land cover and land use classification performance of machine learning algorithms in a boreal landscape using Sentinel-2 data**

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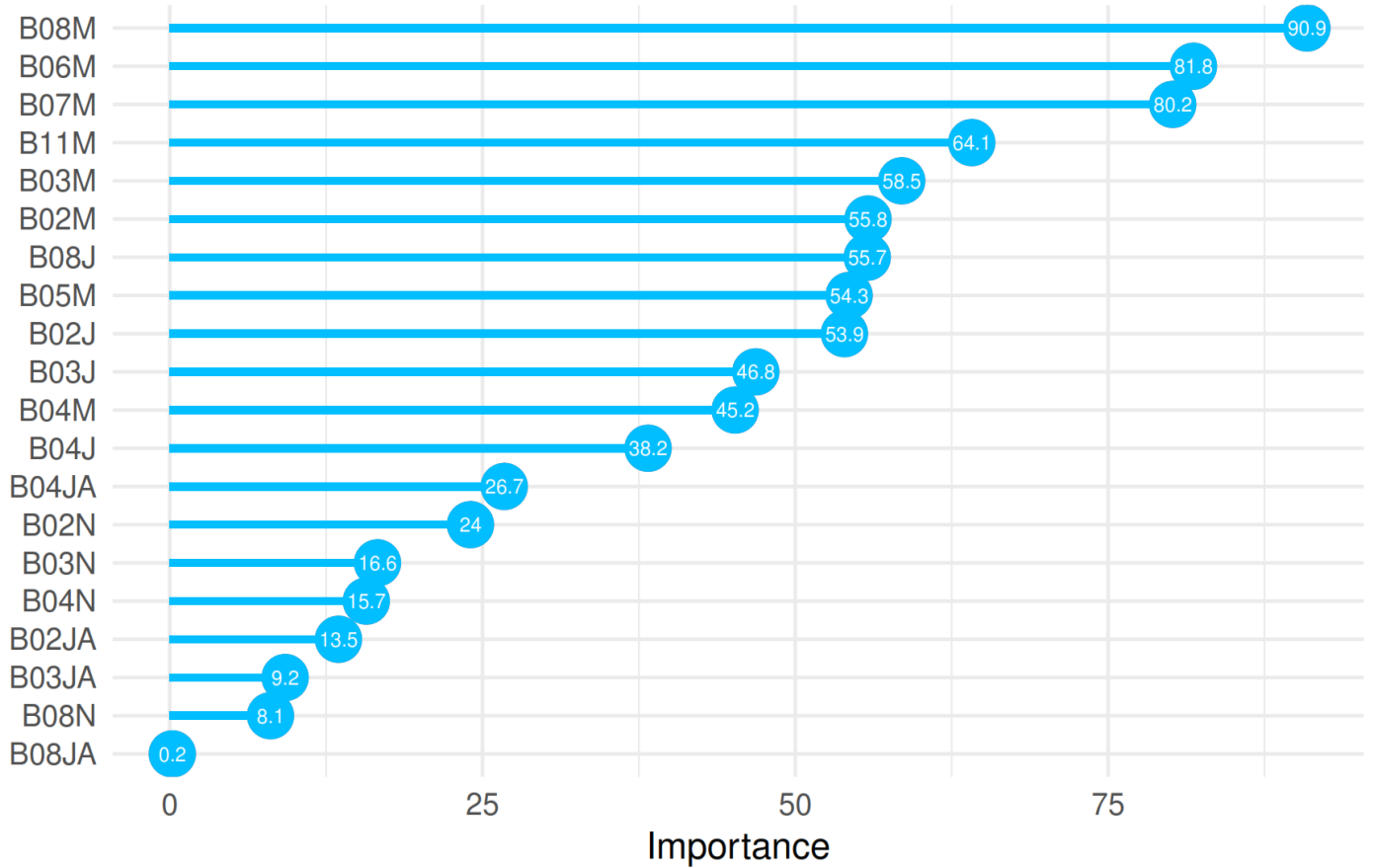
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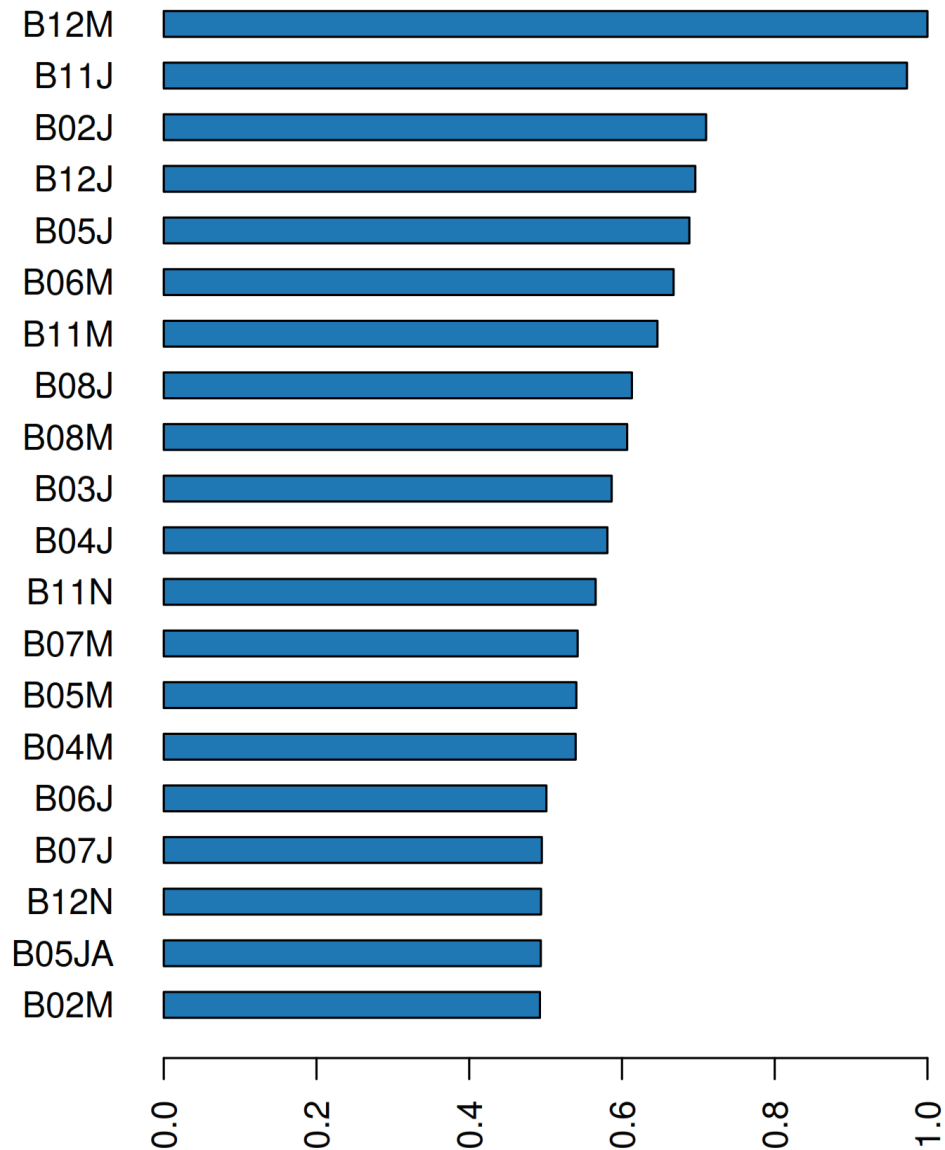
# SUPPLEMENTARY INFORMATION

## Variable Importance: Random Forest



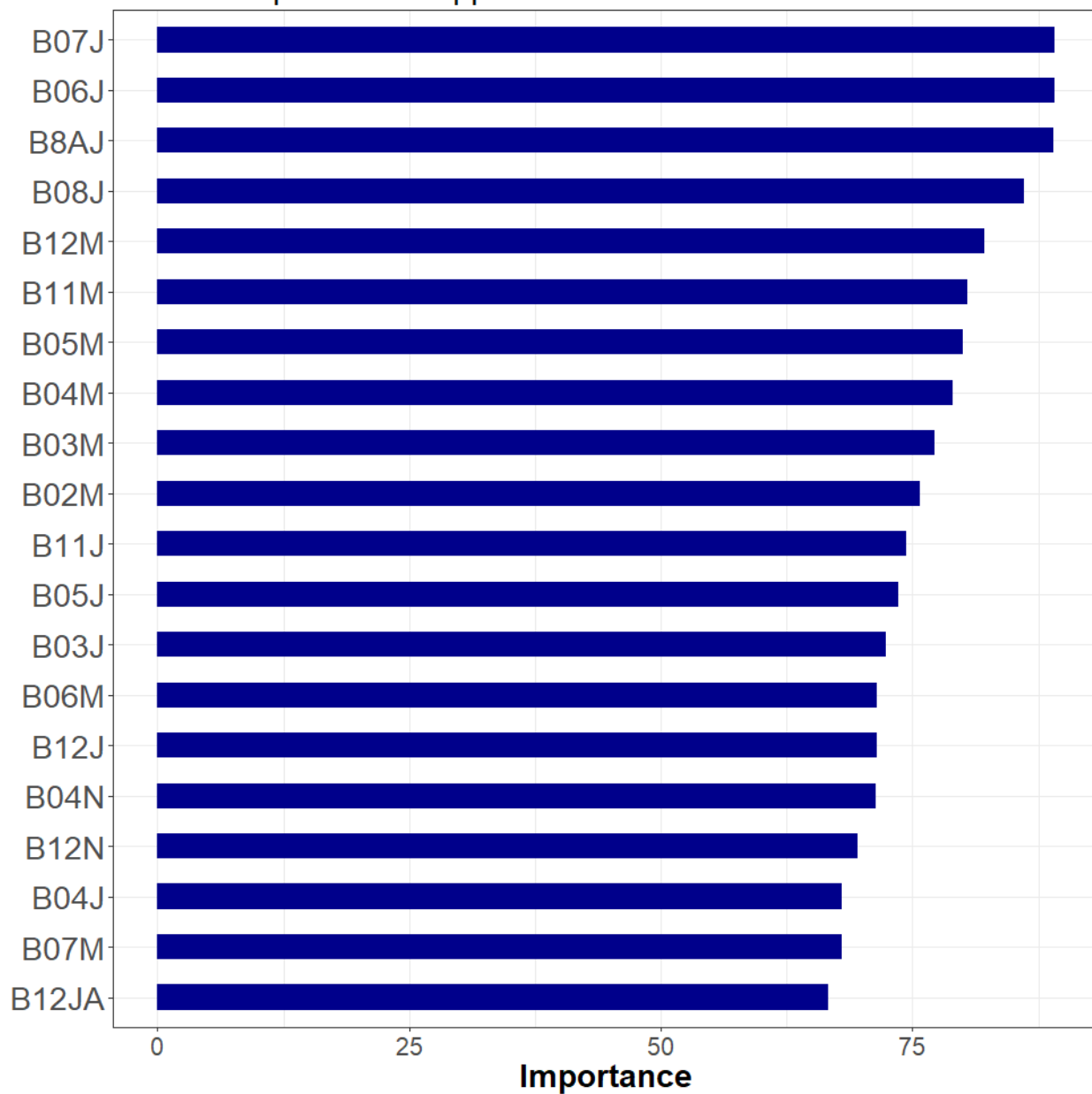
**Supplementary Figure 1:** Variable importance metrics for the top 20 predictors in the random forest model. The x-axis denotes variable importance in percent. The y-axis denotes the unique identifier for each Sentinel-2 band. The letter “B” denotes Band, the following two-digit number denotes the band number (except 8A), and the final letter denotes the month (M=May, J=July, N=November, JA=January). For example, B08M = Band 8 for the image from the month of May; B04JA = Band 4 for the image from the month of January.

## Variable Importance: Deep Learning



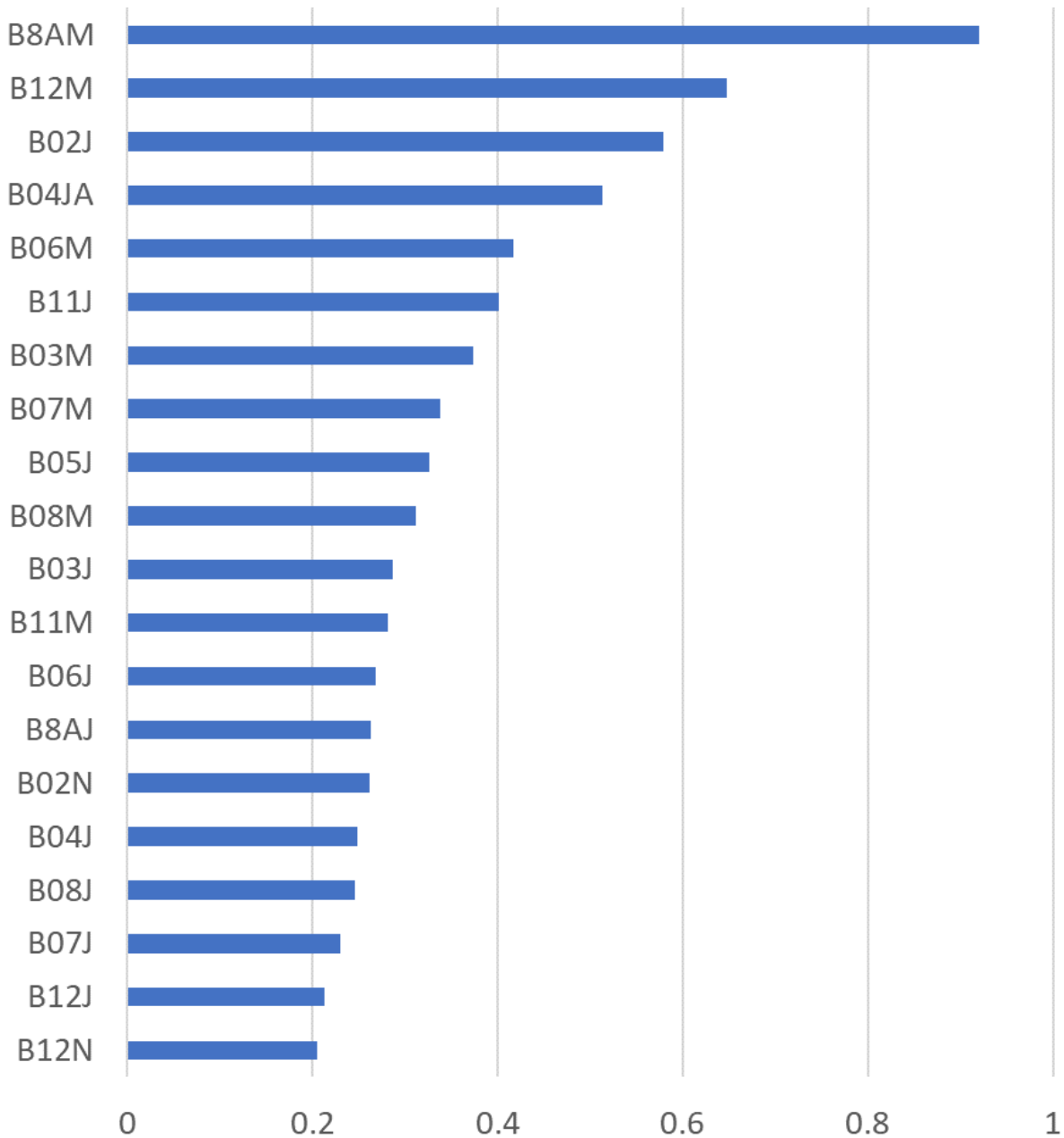
**Supplementary Figure 2:** Variable importance metrics for the top 20 predictors in the deep learning model. The x-axis denotes variable importance in fraction, multiply by 100 to get the percent. The y-axis denotes the unique identifier for each Sentinel-2 band. The letter “B” denotes Band, the following two-digit number denotes the band number (except 8A), and the final letter denotes the month (M=May, J=July, N=November, JA=January). For example, B11J = Band 11 for the image from the month of July; B05JA = Band 5 for the image from the month of January.

Variable Importance: Support Vector Machines



**Supplementary Figure 3:** Variable importance metrics for the top 20 predictors in the support vector machines model. The x-axis denotes variable importance in percent. The y-axis denotes the unique identifier for each Sentinel-2 band. The letter “B” denotes Band, the following two-digit number denotes the band number (except 8A), and the final letter denotes the month (M=May, J=July, N=November, JA=January). For example, B06J = Band 6 for the image from the month of July; B12JA = Band 12 for the image from the month of January.

### Variable Importance: Xgboost



**Supplementary Figure 4:** Variable importance metrics for the top 20 predictors in the extreme gradient boosting model. The x-axis denotes variable importance in fraction, multiply by 100 to get the percent. The y-axis denotes the unique identifier for each Sentinel-2 band. The letter “B” denotes Band, the following two-digit number denotes the band number (except 8A), and the final letter denotes the month (M=May, J=July, N=November, JA=January). For example, B8AM = Band 8A for the image from the month of May; B12N = Band 12 for the image from the month of November.