

## Short description of submissions for the BAD challenge (Elias & Mario)

RunElias #01 (07.01.17) 83.18 AUC

- Convolutional neural network (CNN)
  - o Spectrogram window width: 512 pixel
  - o # Filters: 32,32,64,128,128
  - o # lower spectrogram rows ignored: 52
  - o # Epochs: 172

RunElias #02 (08.01.17) 83.57 AUC

- CNN
  - o Spectrogram window width: 512 pixel
  - o # Filters: 16, 16, 32, 64, 64
  - o # lower spectrogram rows ignored: 52
  - o # Epochs: 96

RunElias #03 (10.01.17) 85.33 AUC

- CNN
  - o Spectrogram window width: 590 pixel
  - o # Filters: 16, 16, 32, 64, 64
  - o # lower spectrogram rows ignored: 52
  - o # Epochs: 54

RunElias #04 (11.01.17) 86.14 AUC

- o Spectrogram window width: 700 pixel
- o # Filters: 32,32,64,128,128
- o # lower spectrogram rows ignored: 5
- o # Epochs: 54

RunElias #05 (12.01.17) 82.21 AUC (84.05 AUC without exponential notation)

- CNN
  - o Spectrogram window width: 1300 pixel
  - o # Filters: 32,32,64,128,128
  - o # lower spectrogram rows ignored: 10
  - o # Epochs: 54

RunElias #06 (13.01.17) 85.43 AUC

- CNN fine-tuning of RunElias #04 with decreased learning rate
  - o Spectrogram window width: 700 pixel

- # Filters: 32,32,64,128,128
- # lower spectrogram rows ignored: 5
- # Epochs: 2

RunElias #07 (14.01.17) 87.54 AUC

- CNN
  - Spectrogram window width: 1300 pixel
  - # Filters: 16, 16, 32, 64, 64
  - # lower spectrogram rows ignored: 52
  - # Epochs: 94

RunElias #08 (15.01.17) 80.53 AUC

- RunElias #07 but data centered using mean and variance of the test set

RunElias #09 (16.01.17) 88.03 AUC

- Average of the best 5 CNNs (after fine-tuning with decreased learning rates)

RunMario #01 (29.12.16) 80.96 AUC

- Random Forest classification using acoustic features extracted with OpenSMILE

RunMario #02 (30.12.16) 83.11 AUC

- Random Forest classification using Segment Probabilities features
  - spectrogram patches extracted from bird files were used to create matching probabilities via template matching
  - feature selection was performed during RF training to find the most important segments to distinguish bird from none-bird files

RunMario #03 (31.12.16) 82.82 AUC

- same as RunMario #02 but features selection was performed using only spectrogram patches from freefield sounds trained on warblr sounds and vice versa

RunMario #04 (08.01.17) 84.97 AUC

- Average of RunMario #01 (OpenSMILE) and RunMario #02 (Segment Probabilities)

RunMario #05 (12.01.17) 81.65 AUC

- Most important spectrogram patches from RunMario #02 were used to create features for an augmented training set

- Training set was enlarged forming a three times larger set by keeping the original files plus mixing every training sound file twice with a different, randomly selected sound file (for none-bird sounds only other none bird sounds were selected for mixing)

RunMario #06 (13.01.17) 86.45 AUC

- Average of RunMario #02, RunMario #04 & RunElias #06

RunMario #07 (14.01.17) 88.47 AUC

- Average of 4 CNNs (RunElias # 3, 4, 6 & 7)

RunMario #08 (15.01.17) 86.55 AUC

- Average of best 4 CNNs (RunElias # 3, 4, 6 & 7) fine-tuned with decreased learning rate, RunMario #02 & RunMario #04

RunMario #09 (16.01.17) 87.75 AUC

- Weighted average of 5 fine-tuned CNNs