



PMP Data Analysis

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GN5-1 Work Package 6 Task 3
Monitoring and Management

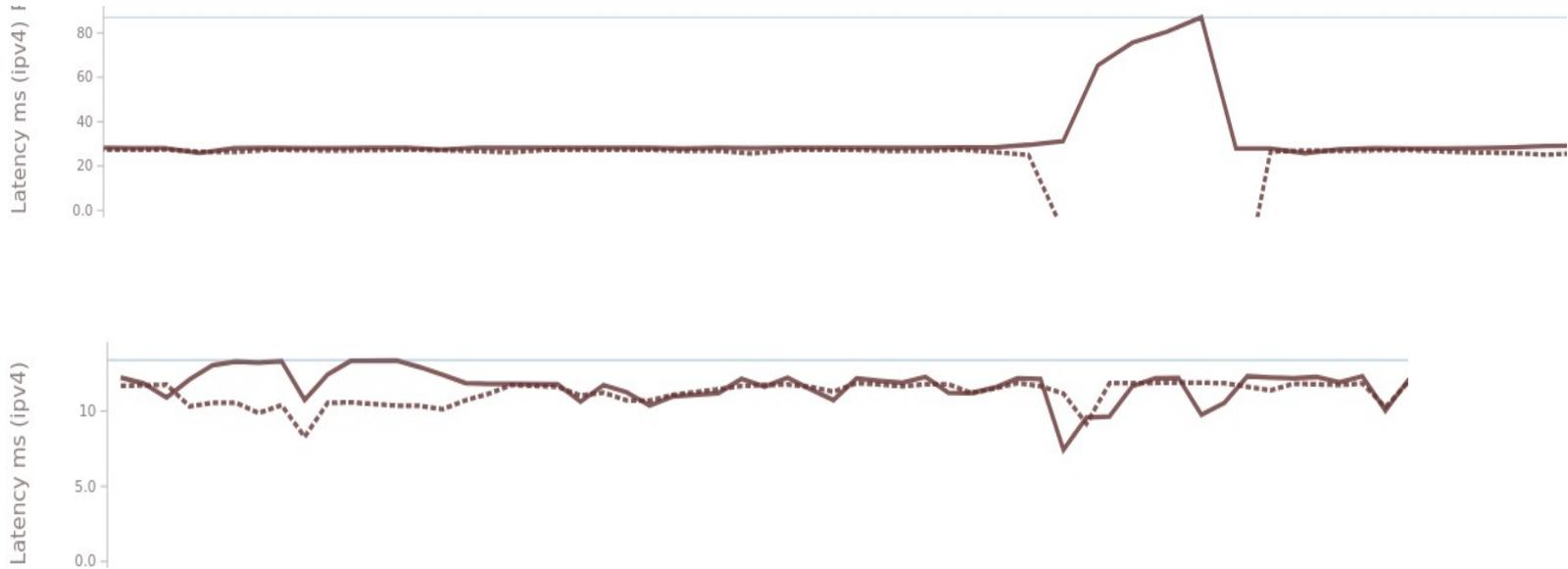
4th European perfSONAR User Workshop
14th - 16th May 2024 Trondheim, Norway

Public (PU)

Data

- OWD
 - Measurement frequency is 60 seconds
 - 1440 measurements a day
 - Average of 3 months of data taken for training the model (~130,000 datapoints)

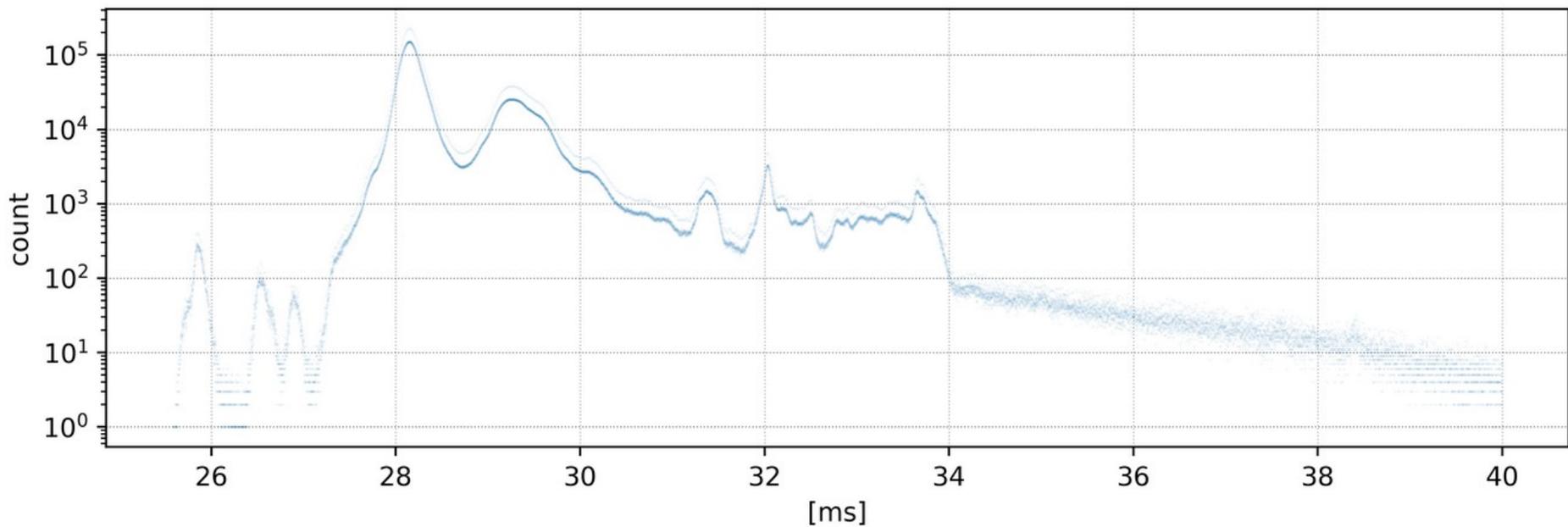
Data



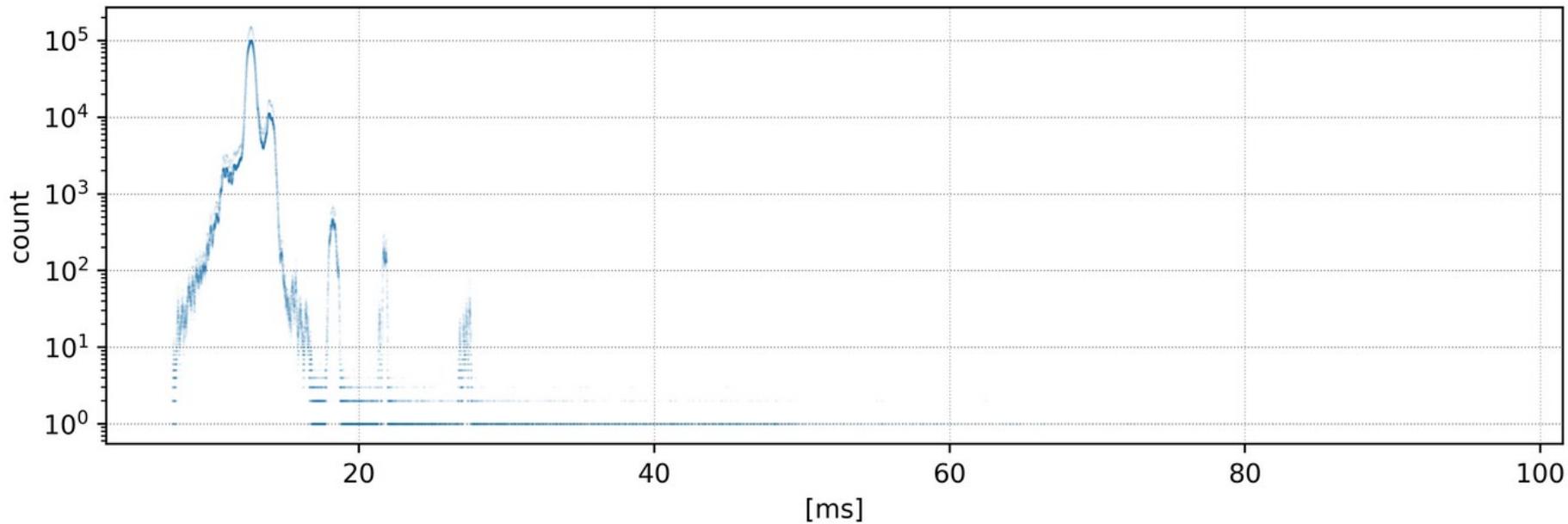
$\Delta T = \sim 3$ months

- 1. ROM – LIS 2. CRO - POZ

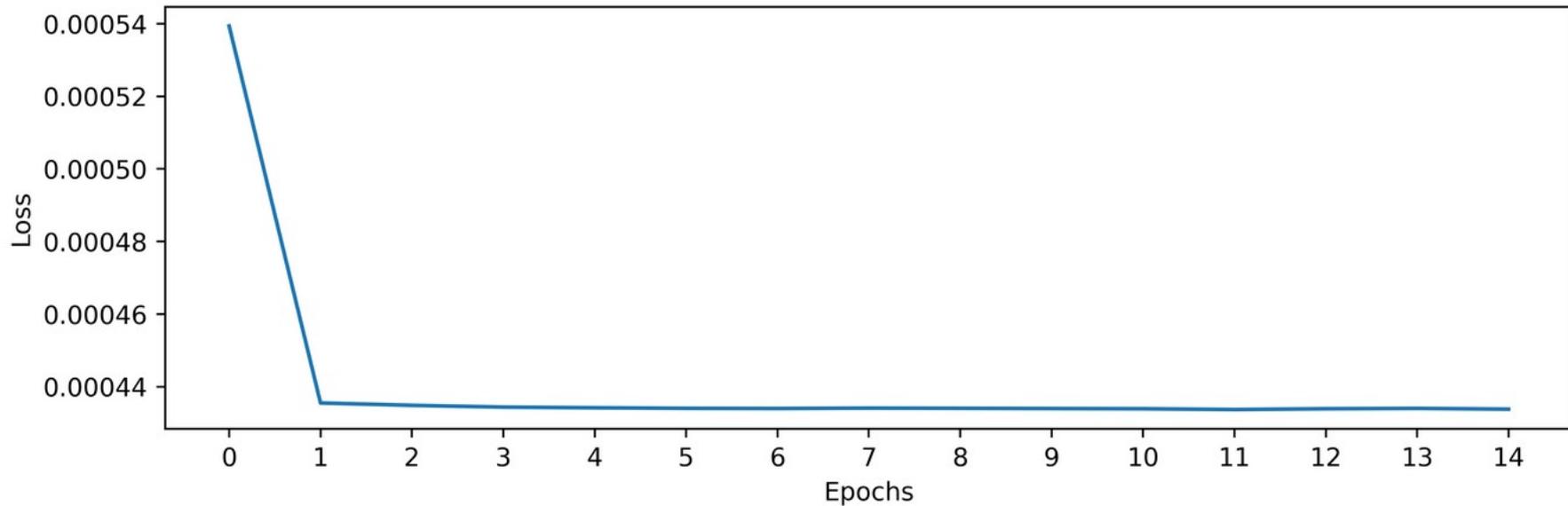
OWD distribution (ROM - LIS)



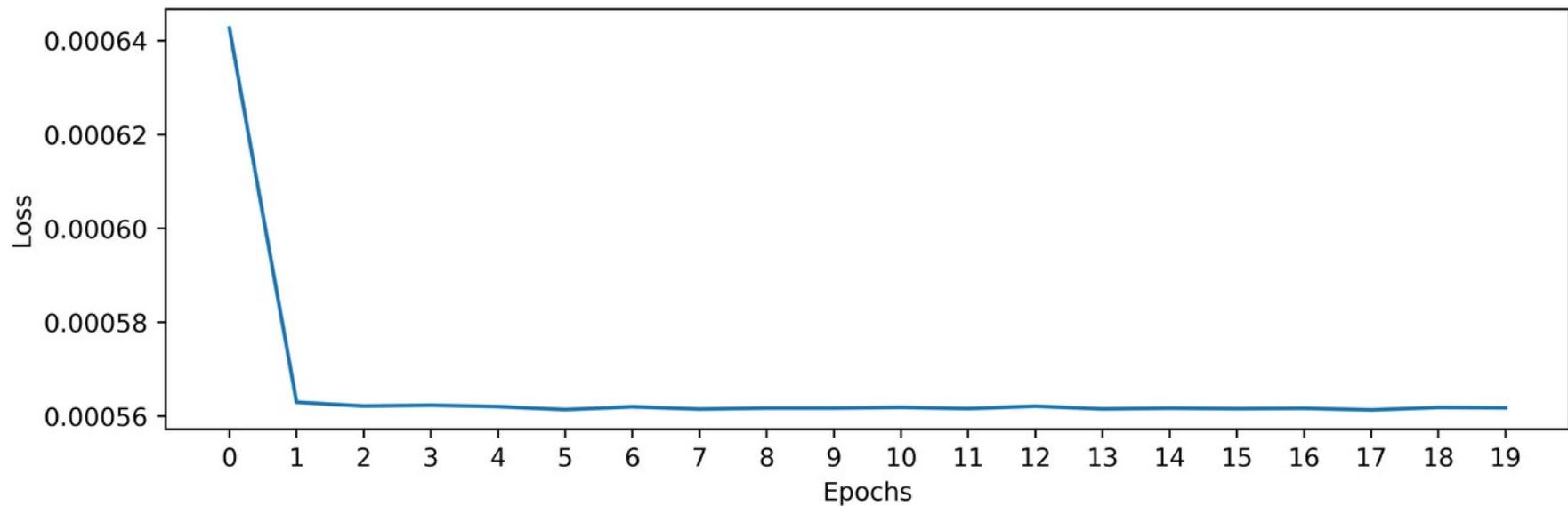
OWD distribution (CRO - POZ)



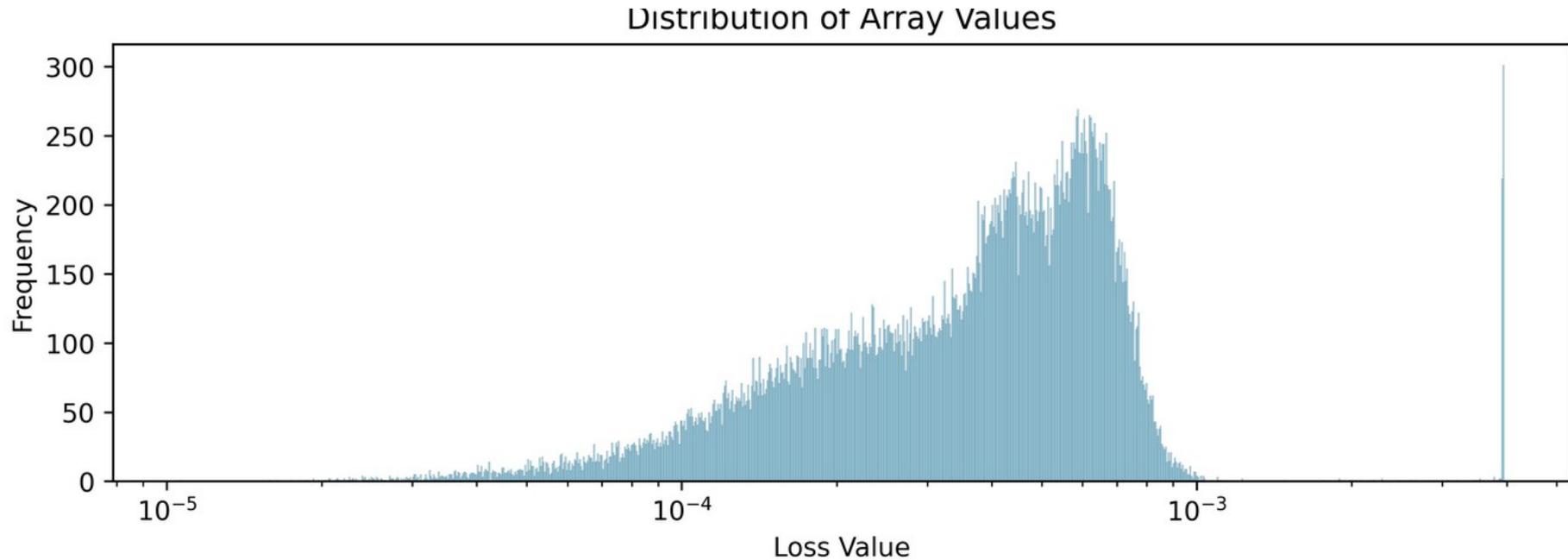
Model Training (ROM - LIS)



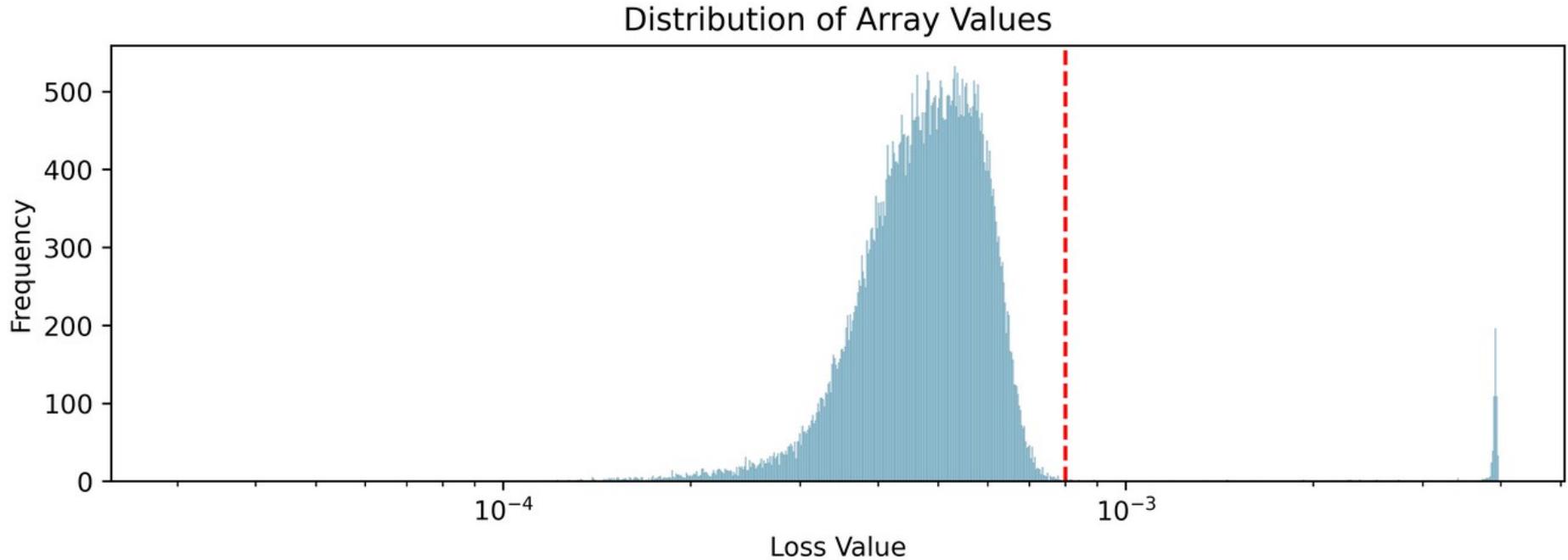
Model Training (CRO - POZ)



Model Training (ROM - LIS)



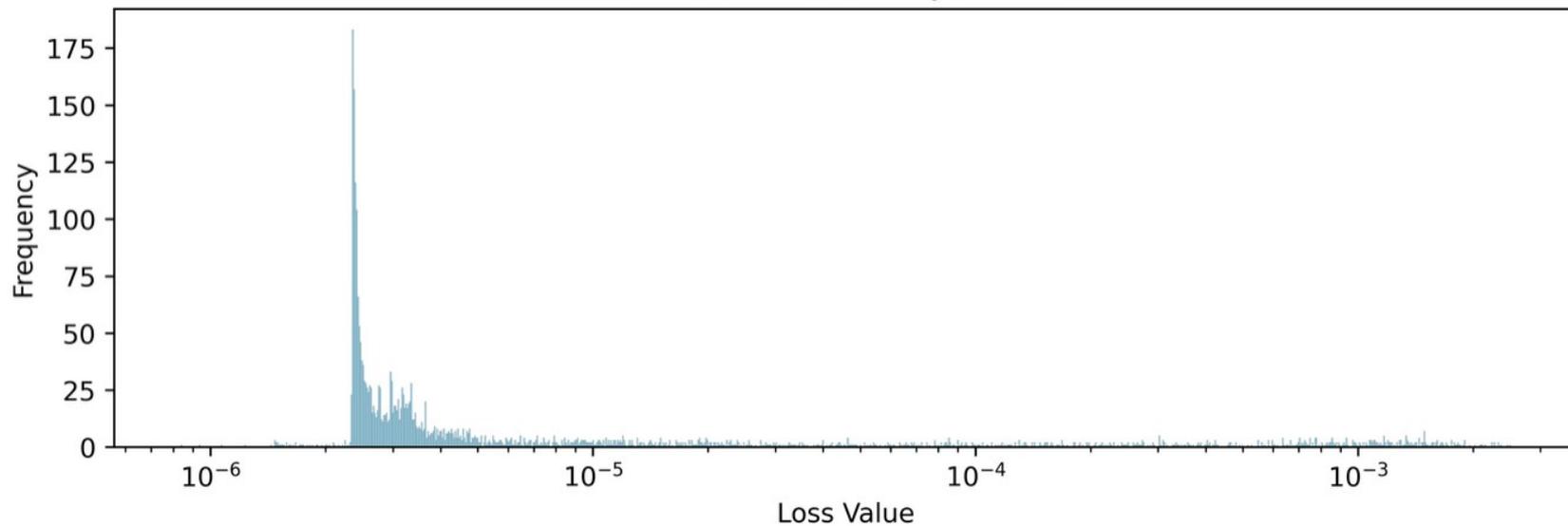
Model Training (CRO - POZ)



Testing the models (ROM - LIS)



Distribution of Array Values



Testing the models (ROM - LIS)

- Thresholds:

upper = $1e-3$

lower = $5e-5$

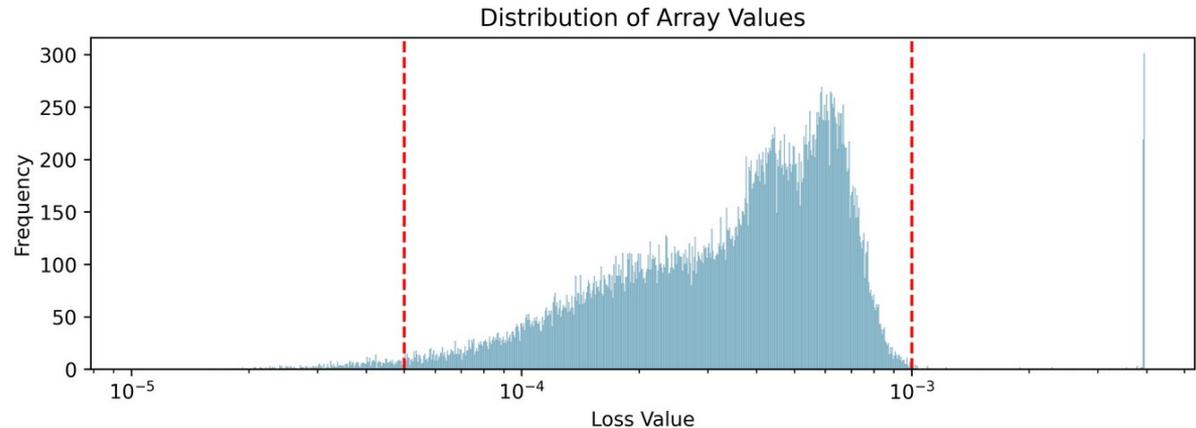
- Results:

over threshold : 145

normal : 344

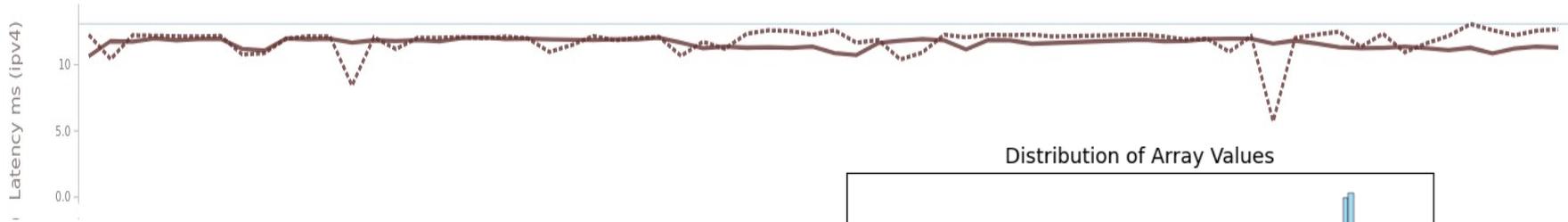
under threshold : 2397

- 88.1% detected as anomalies

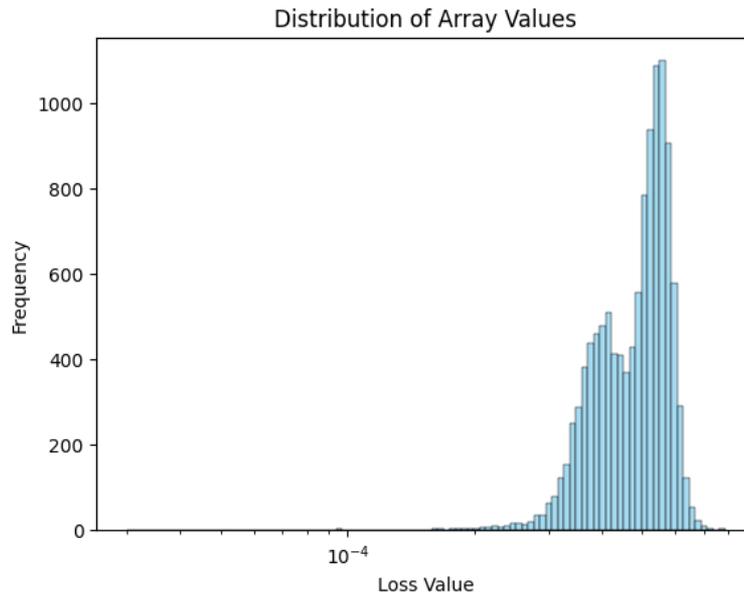


New Data Testing (CRO - POZ)

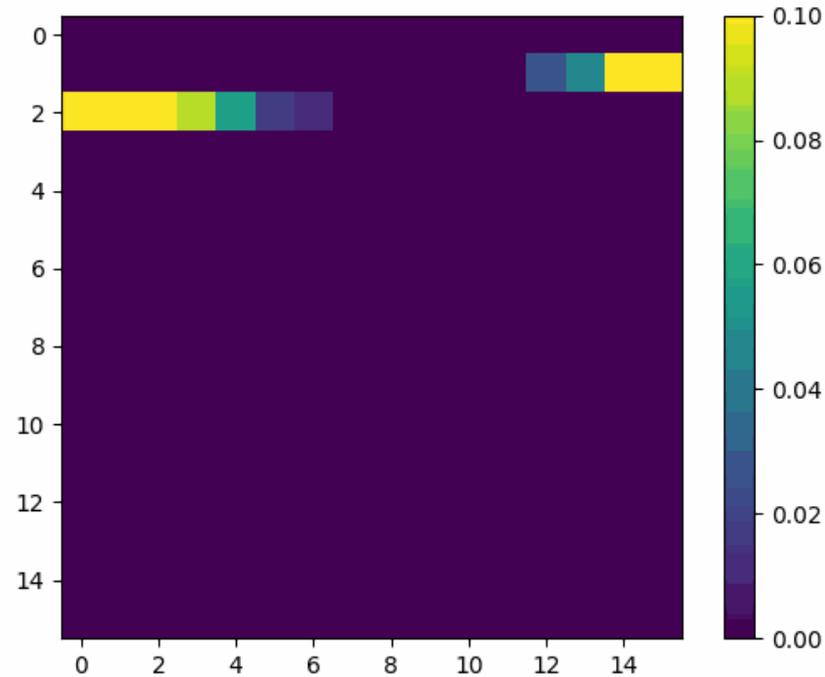
$\Delta T = 8$ days (01.04.2024 - 08.04.2024)



- 33/11516 histograms detected as anomalies



Analyzing anomalies (CRO - POZ)



Current Progress and embracing what is to come

- Current :
 - Near Real-Time Anomaly detection
- To come :
 - LSTM model
 - Further anomaly analysis



Thank You!

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Co-funded by
the European Union