

Winterstorm prediction

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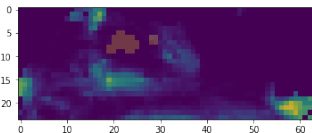
Course: My first scientific paper
(Strijov's practice)/Group 904

Expert: Y. Maximov

2022

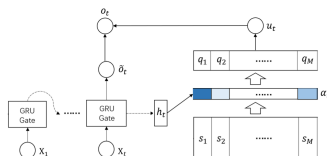
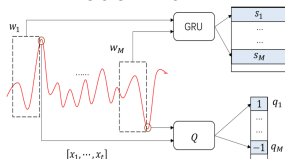
One-slide talk

(24, 64) class and feature maps example v_t, y_t



Goal: predict both maps in time t

Model with M windows



Extreme Value Loss or EVL with γ

$$EVL(u_t, v_t) = \sum_{s \in S} -\beta_{s0} \left(1 - \frac{u_{st}}{\gamma}\right)^\gamma v_{st} \log(u_{st}) - \beta_{s1} \left(1 - \frac{1-u_{st}}{\gamma}\right)^\gamma (1 - v_{st}) \log(1 - u_{st})$$

$$\beta_{si} = Pr(v_{st} = i), i \in \{0, 1\}; S \text{ -map}$$

Total loss

$$\|o_t - y_t\|_F^2 + \lambda EVL(u_t, v_t)$$

o_t - predicted feature map

u_t - predicted class map

λ - hyperparameter