

## Motivation

- Watching long hours of uncontrolled videos is extremely tedious
- We want to segment ‘meaningful’ moments in such videos without supervision

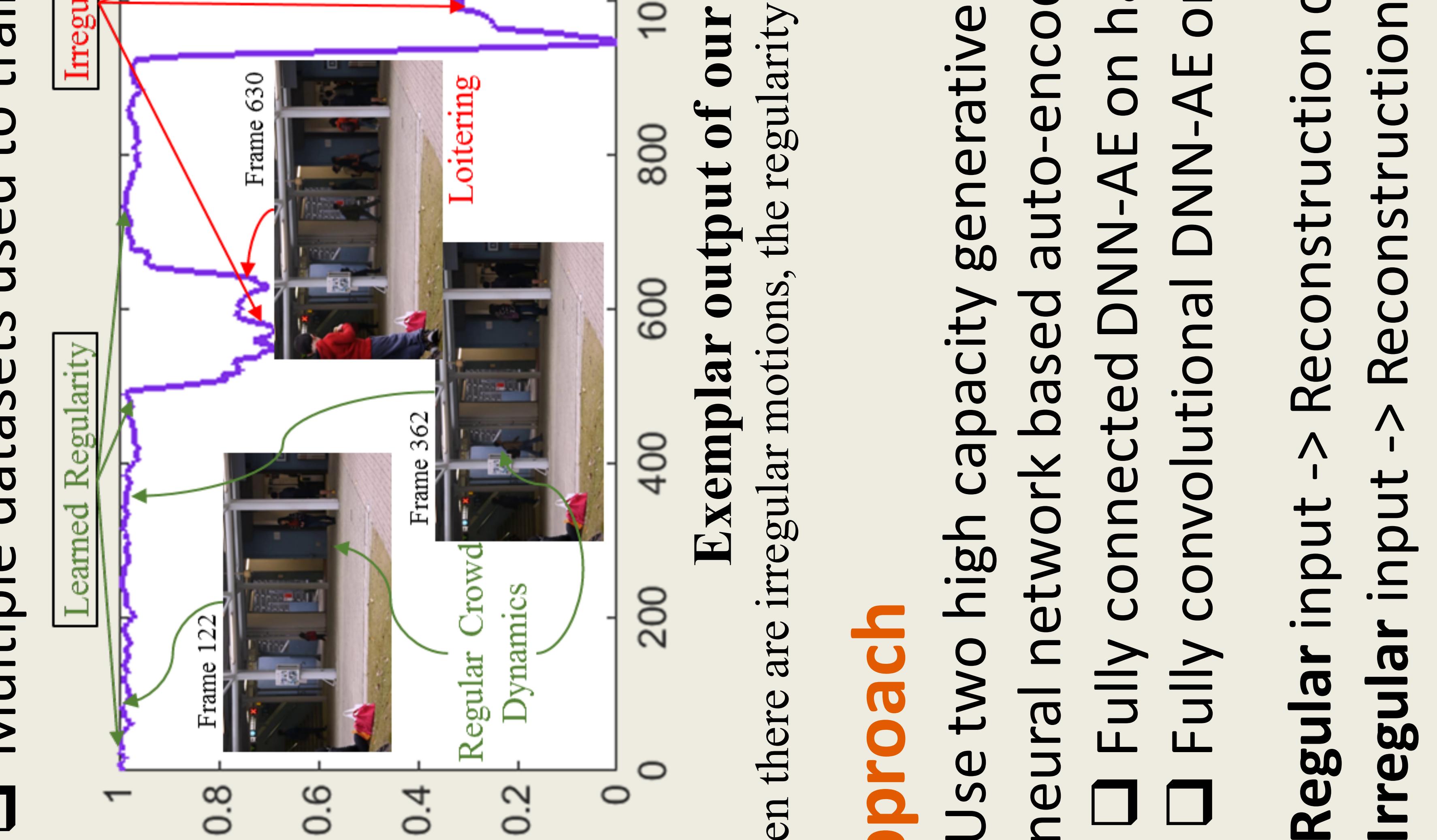
## Challenges

- Learning a classification model of these meaningful (irregular) moments is not trivial because –
  - Ill defined (anything can be meaningful)
  - Infrequent (small training data)
  - Labeling them is expensive.

## Our Objective

- Learning a generative model for regularity with
  - Limited supervision required
  - Ease of learning
  - Multiple datasets used to train

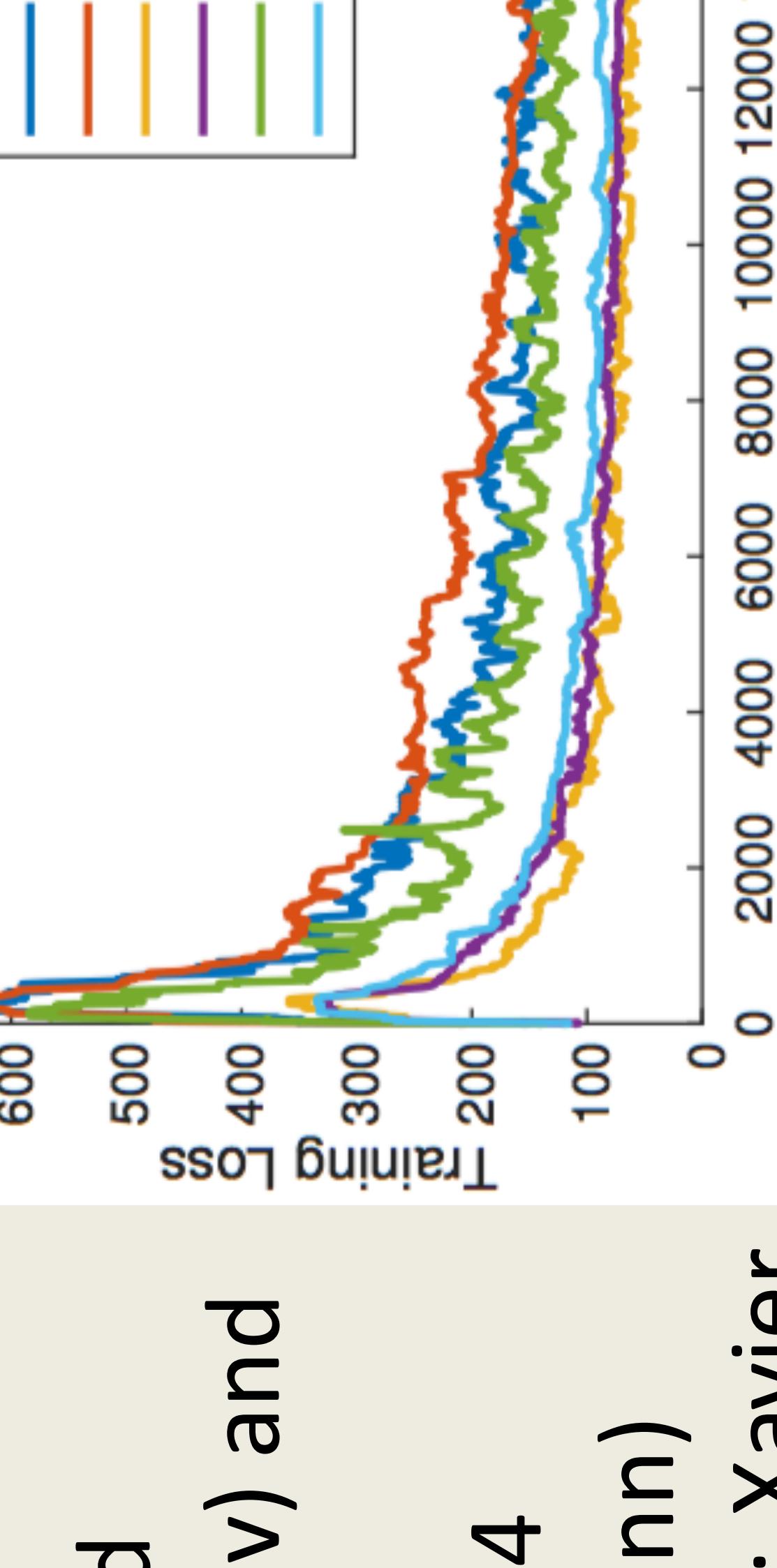
## Learned Regularity



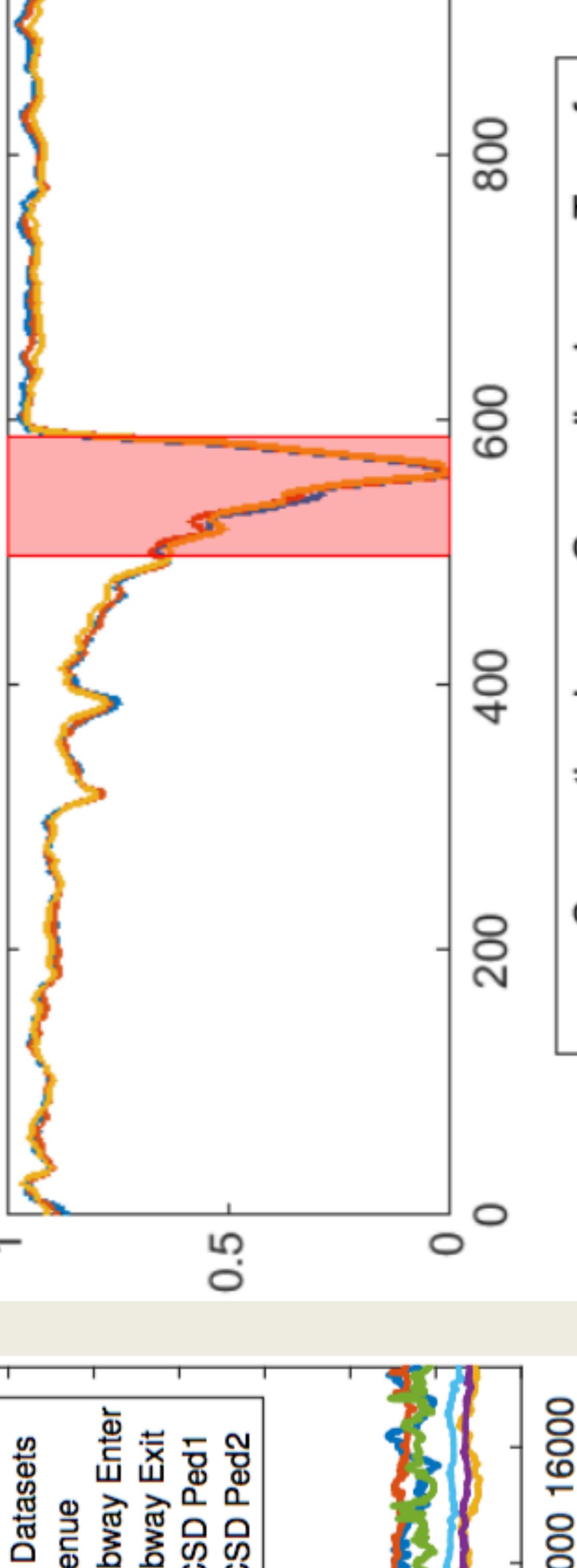
## Optimization

- LR Scheme: AdaGrad
- Init. LR: 0.001 (FConv) and 0.01 (FConn)
- Mini-batch size: 1024 (FConv) and 32 (FConn)
- Weight initialization: Xavier

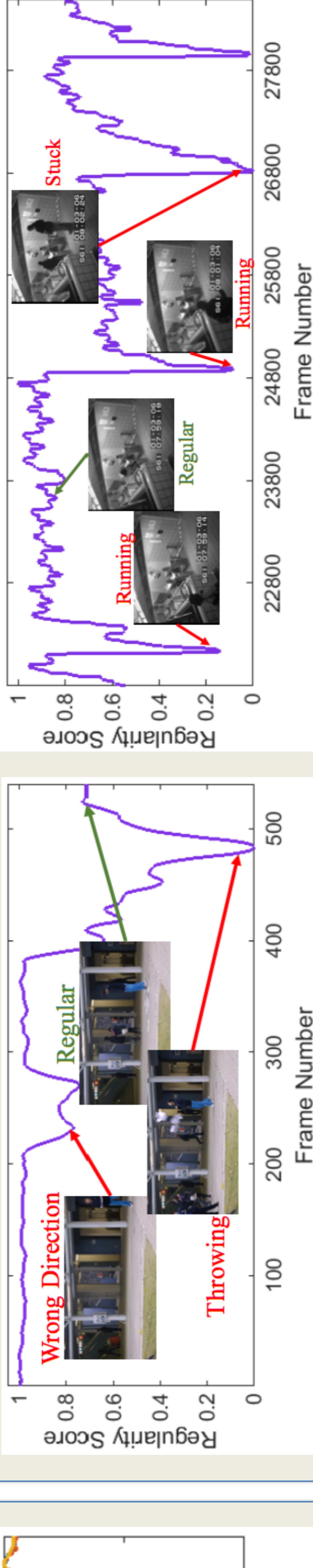
## Training a General Model



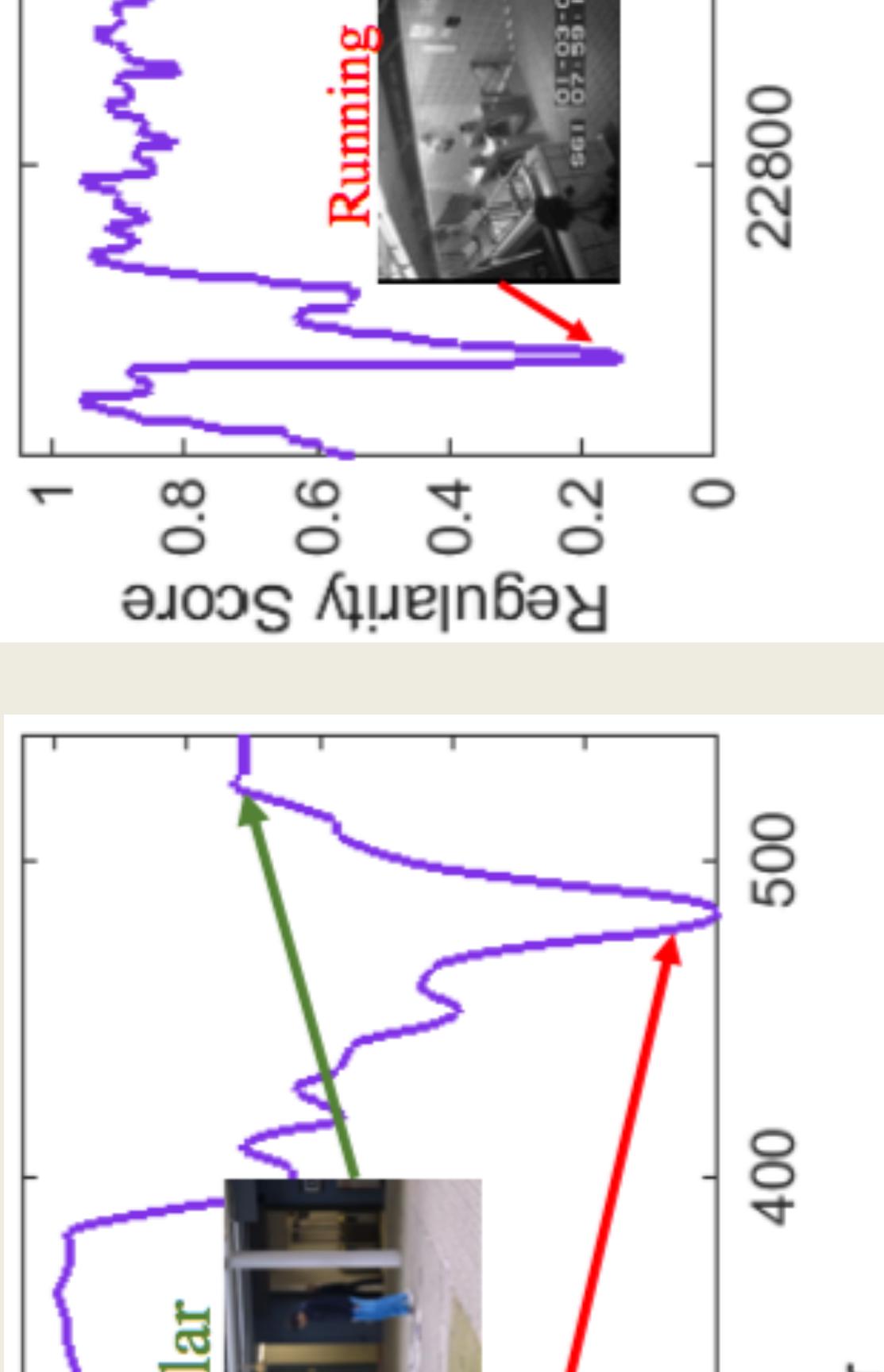
## Regularity Scores by the General Model



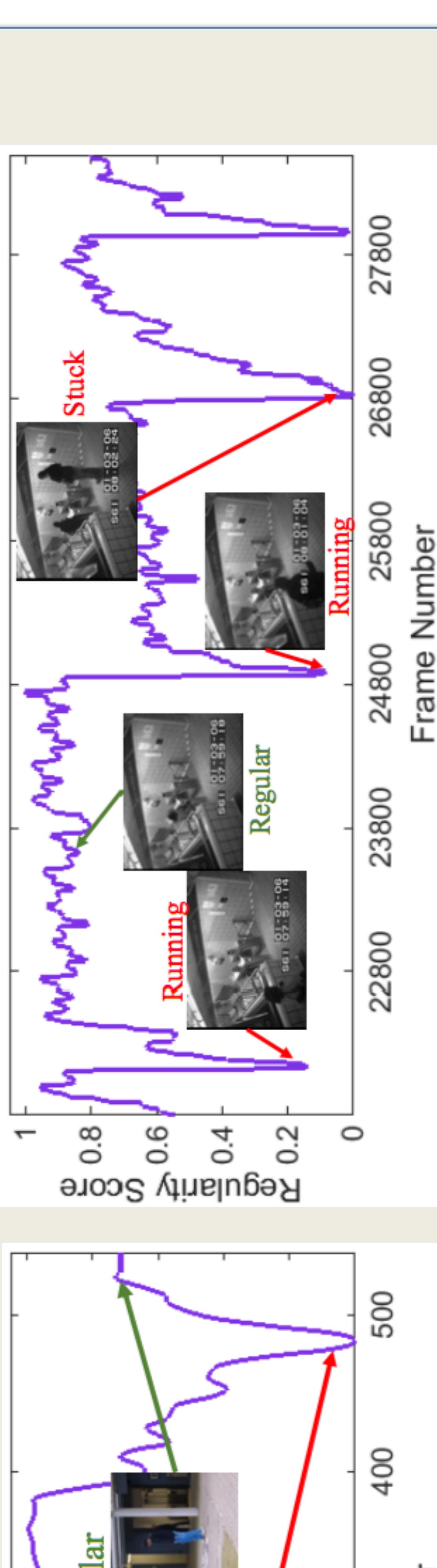
## Regularity Scores



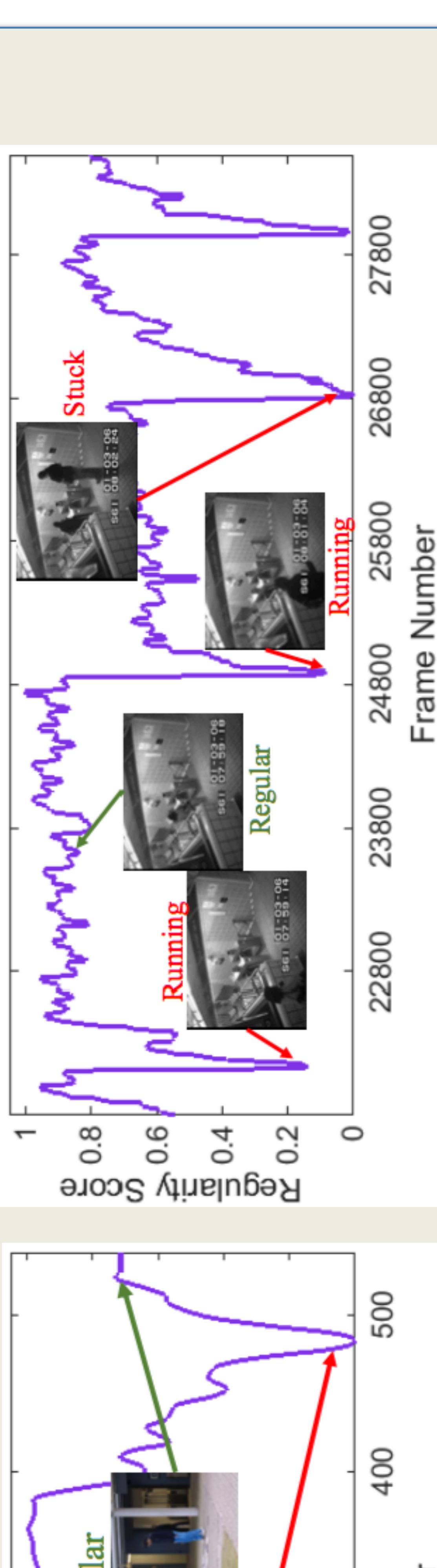
## CUHK Avenue Dataset



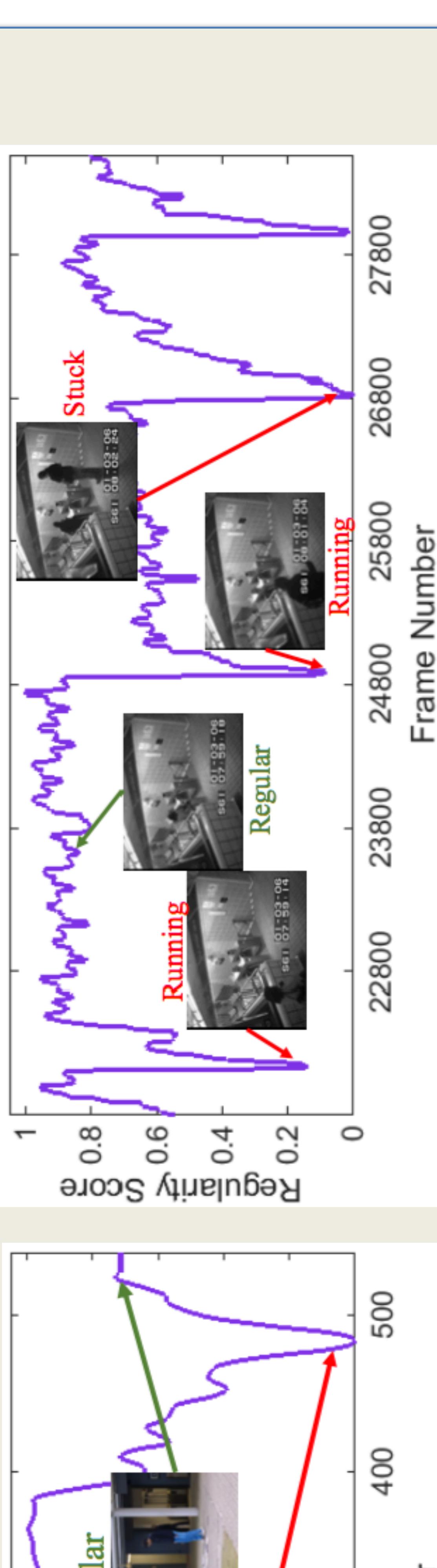
## UT-Austin Subway-Exit Dataset



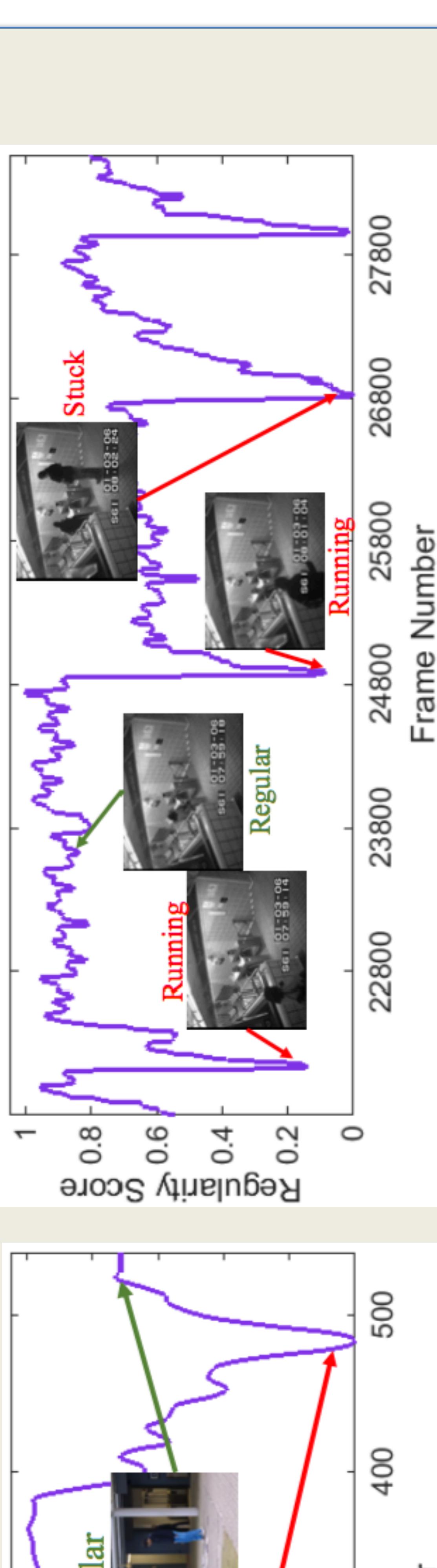
## UCSD Ped2 Dataset



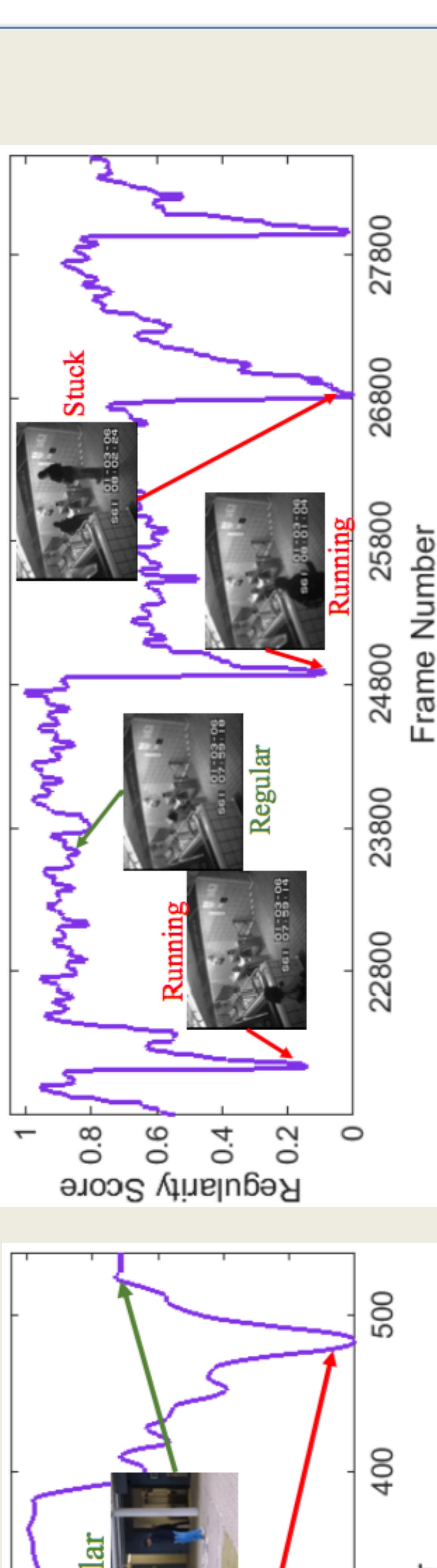
## CUHK Avenue Dataset



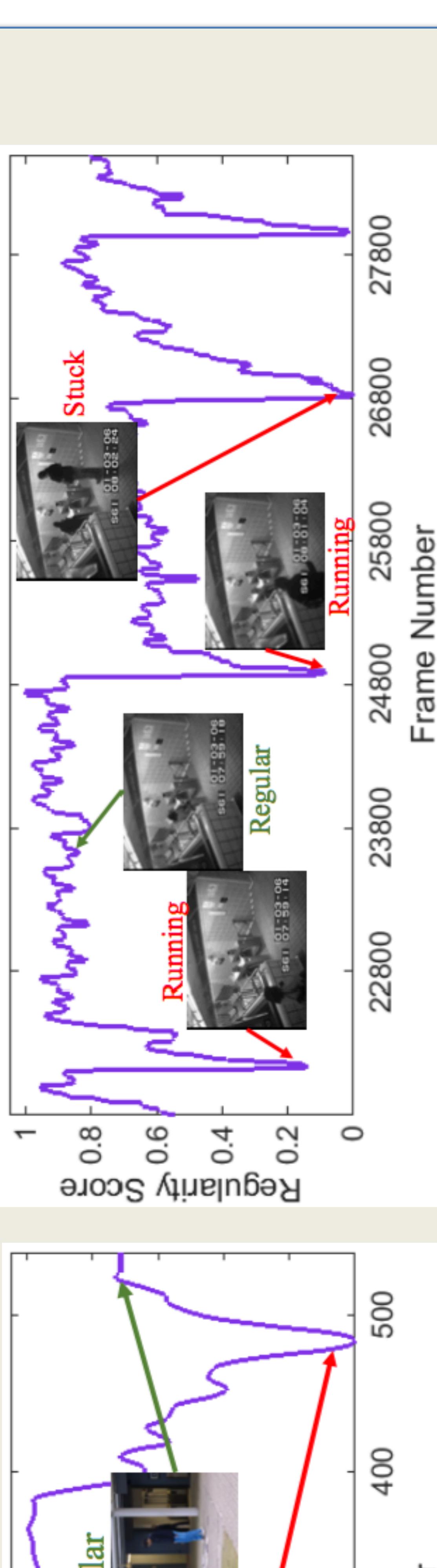
## UT-Austin Subway-Enter Dataset



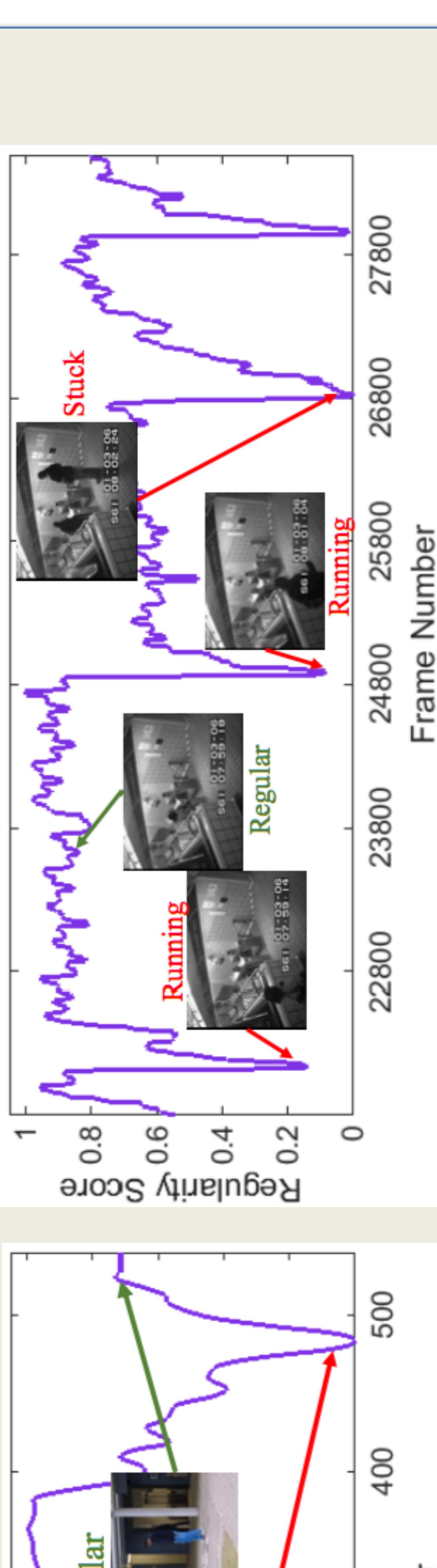
## UCSD Ped1 Dataset



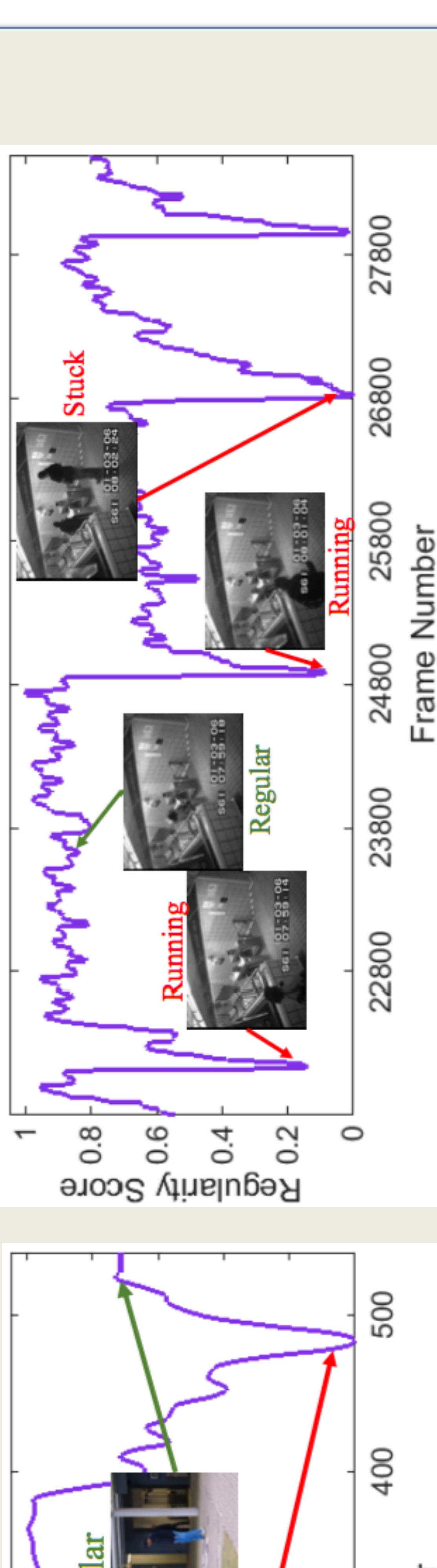
## Subway Entrance Dataset



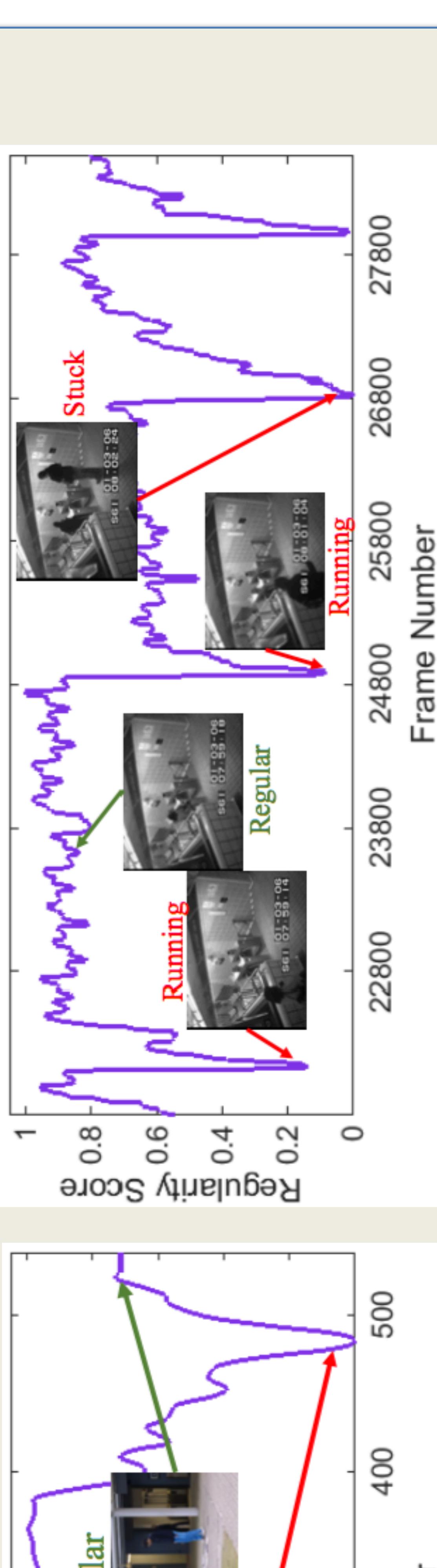
## Subway Exit Dataset



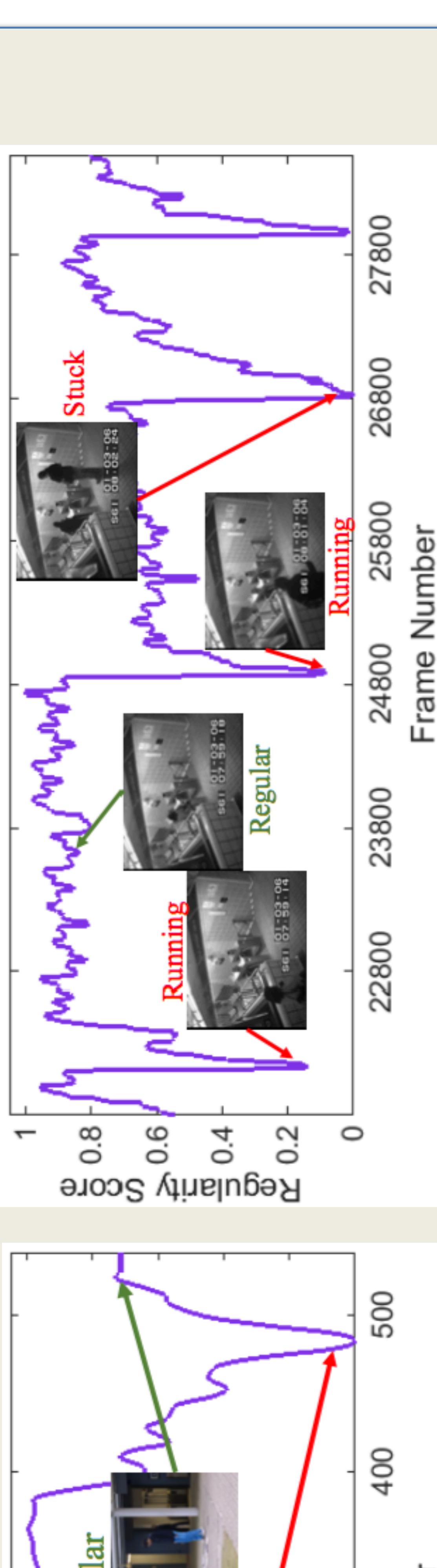
## Subway Passage Dataset



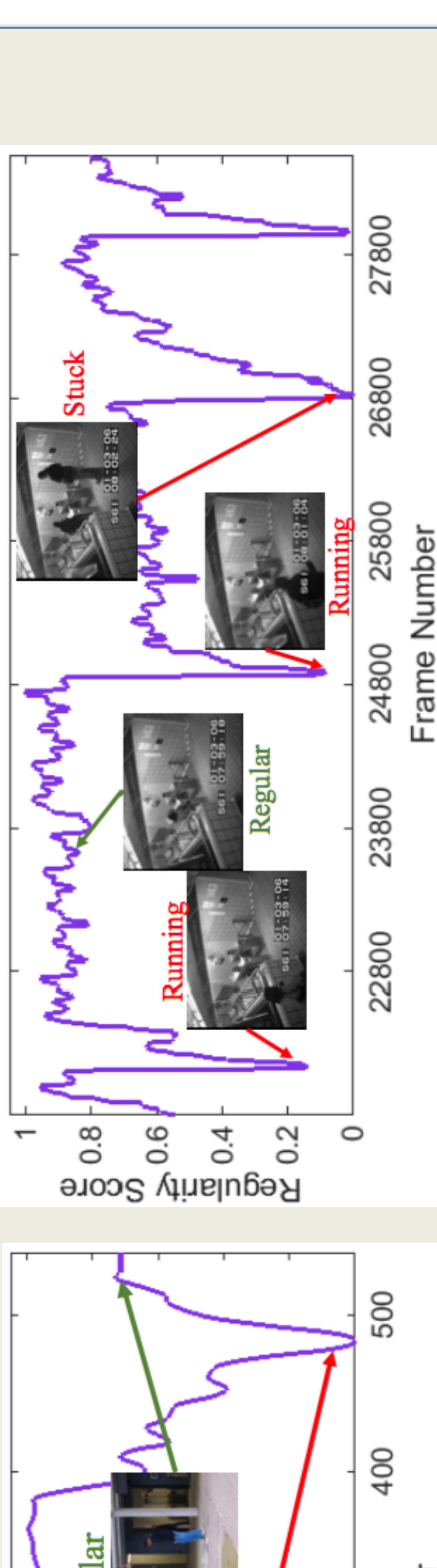
## Subway Station Dataset



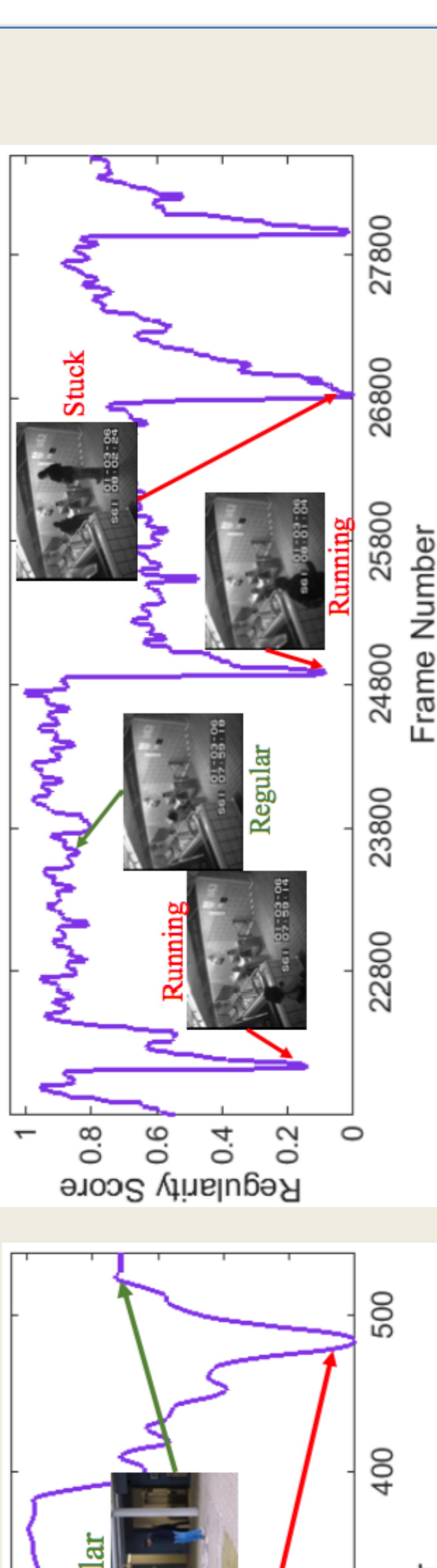
## Subway Platform Dataset



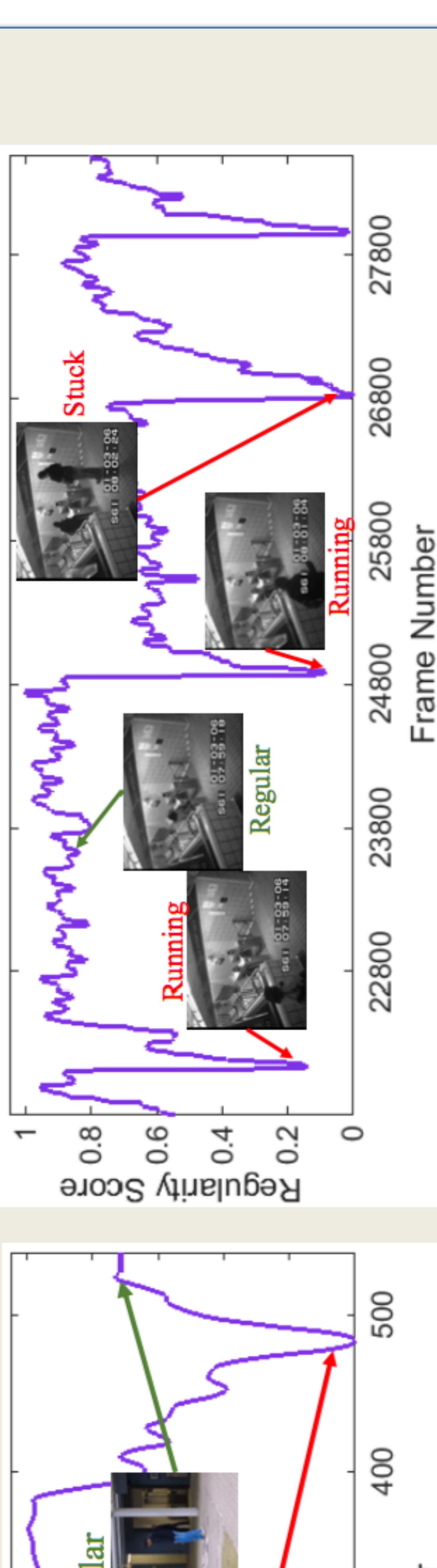
## Subway Tunnel Dataset



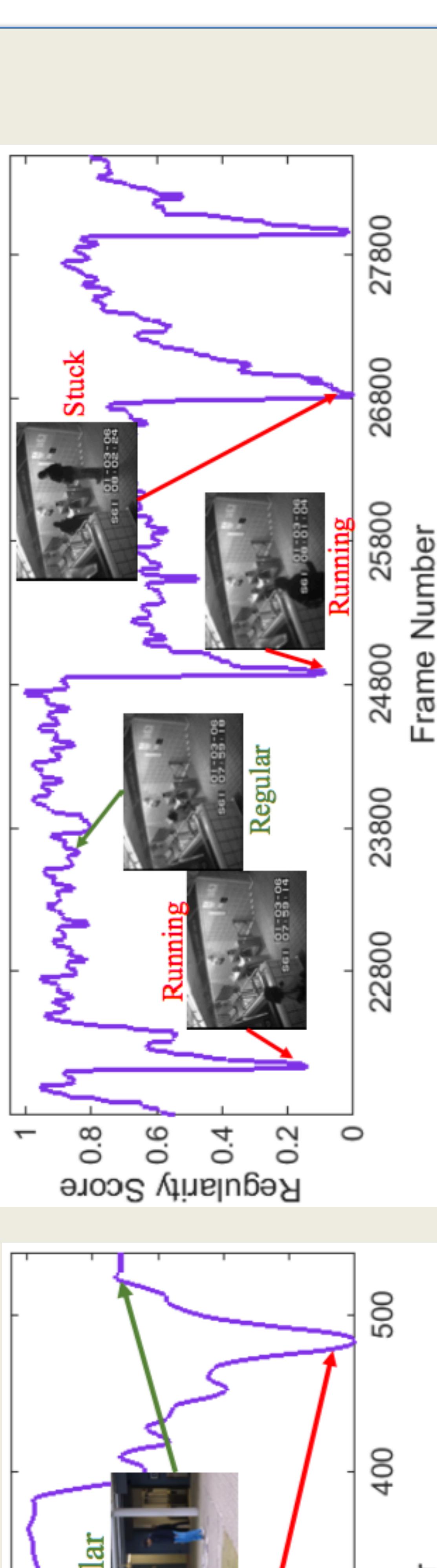
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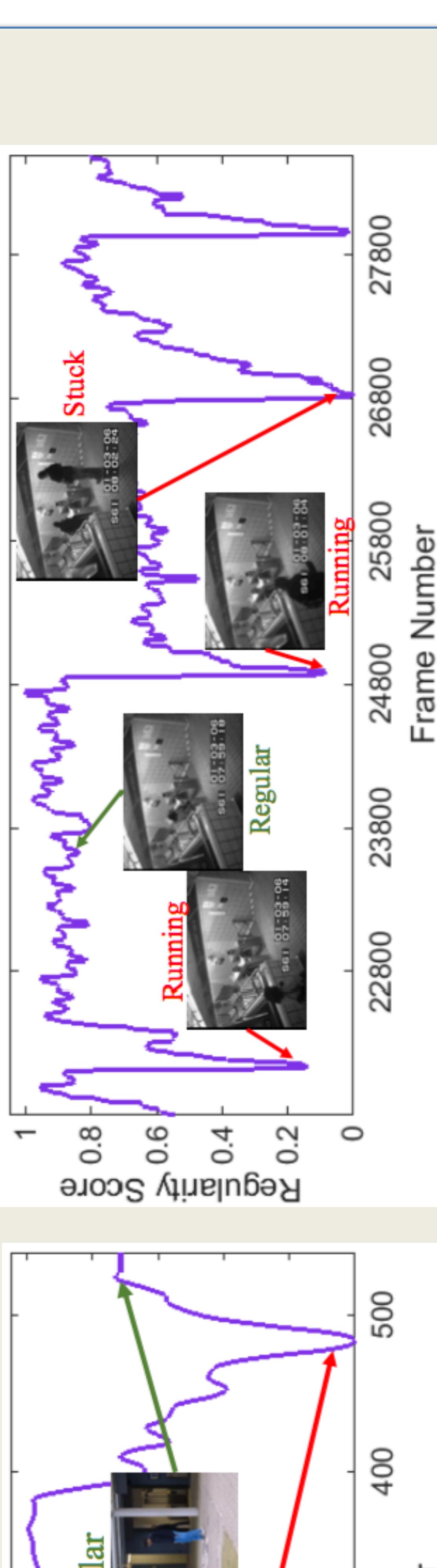
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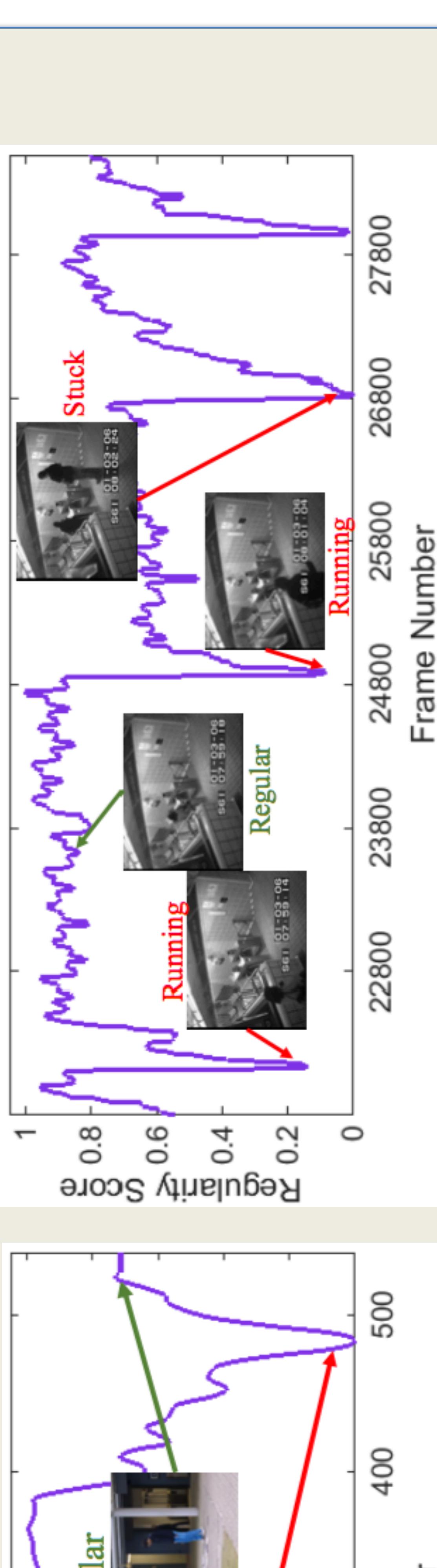
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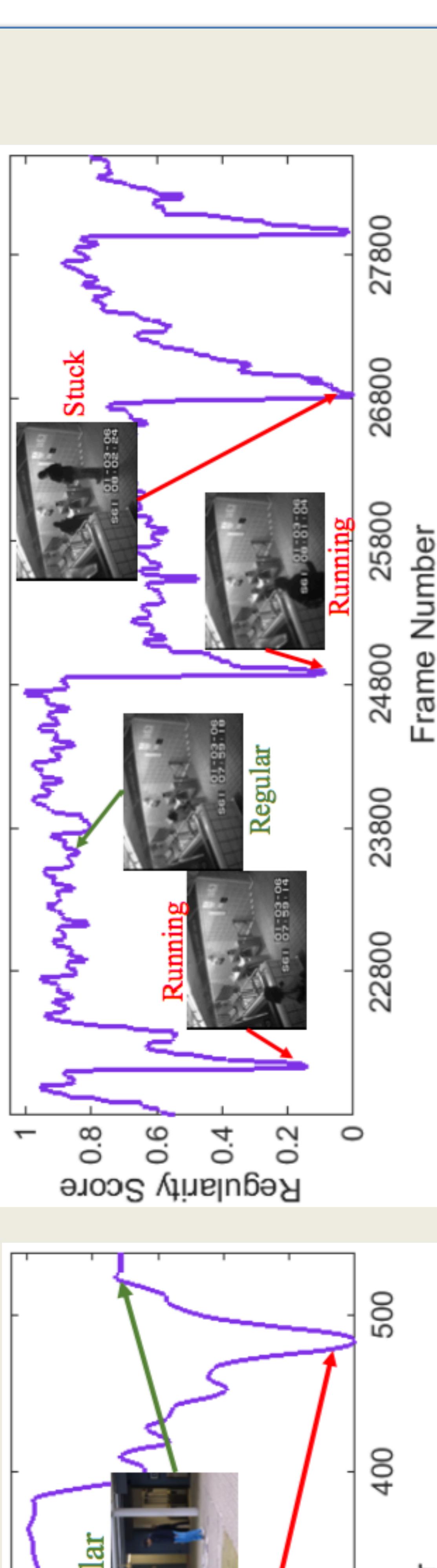
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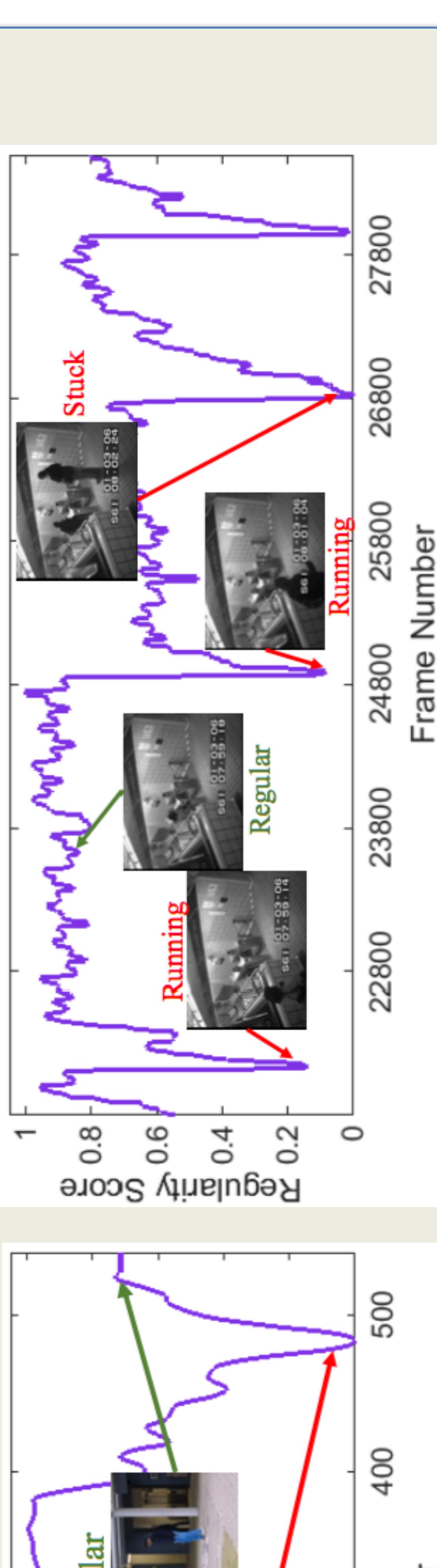
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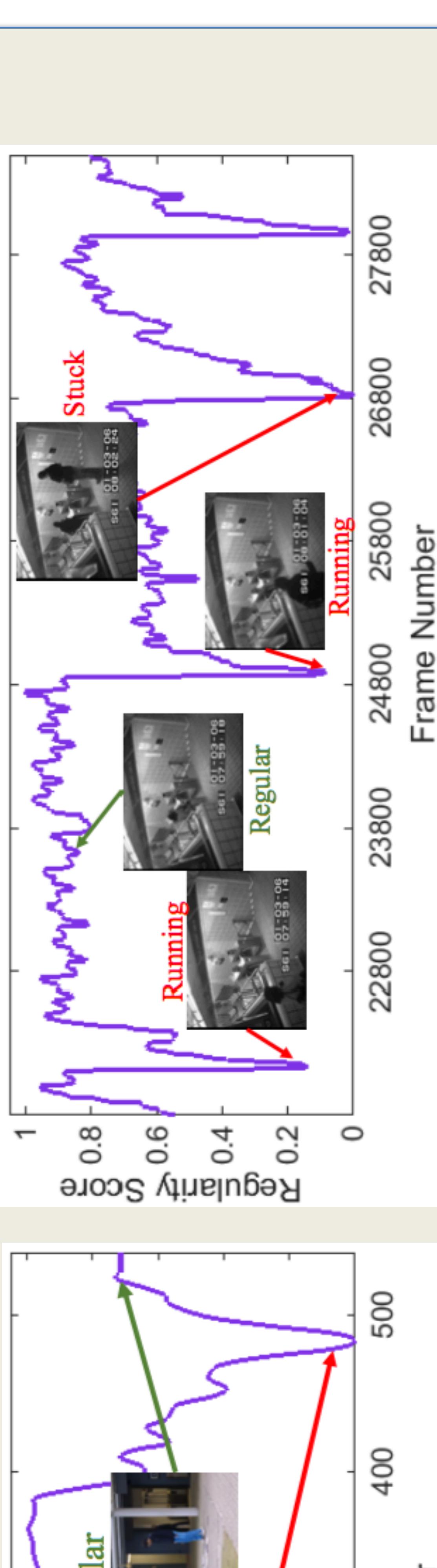
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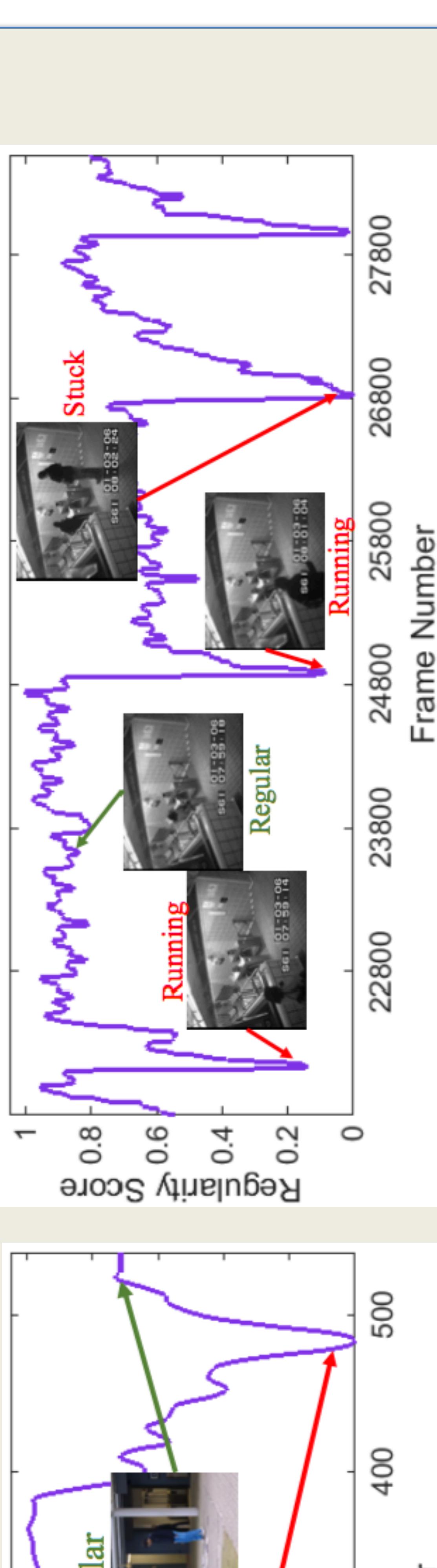
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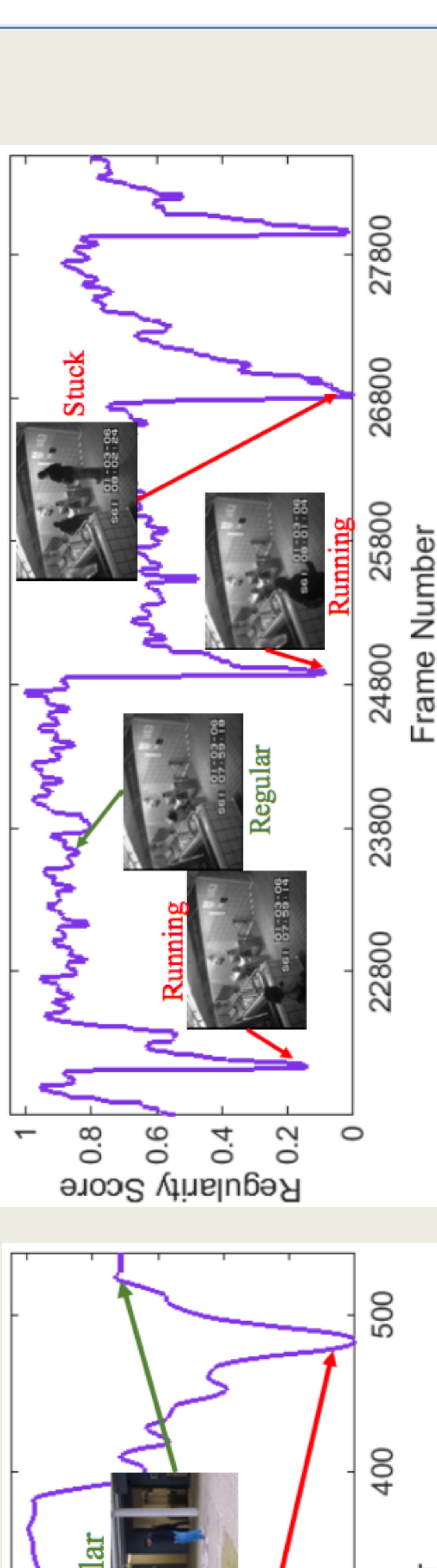
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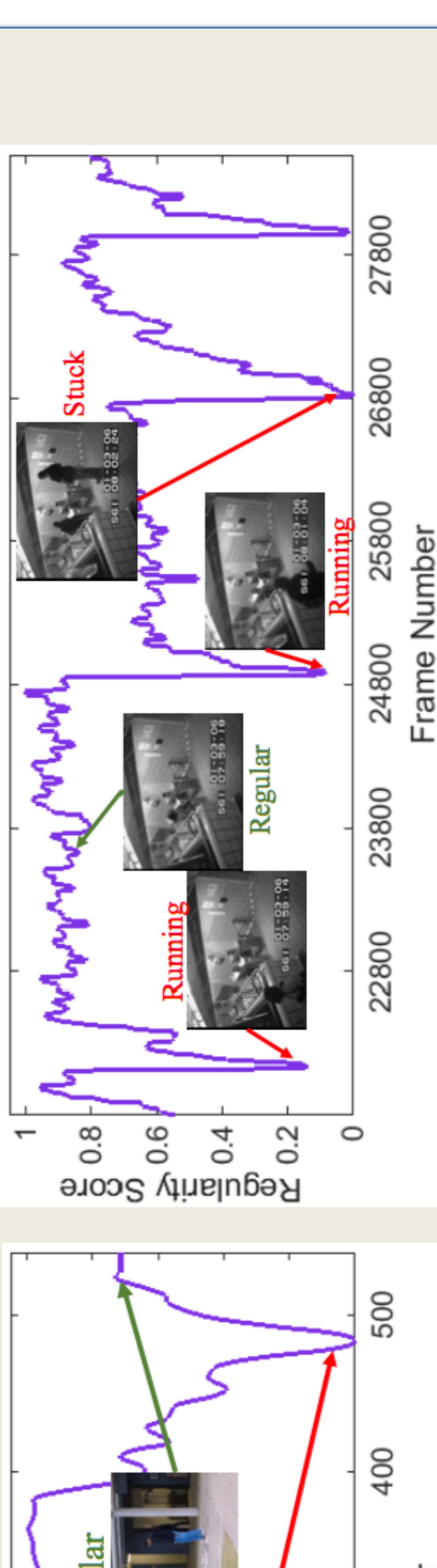
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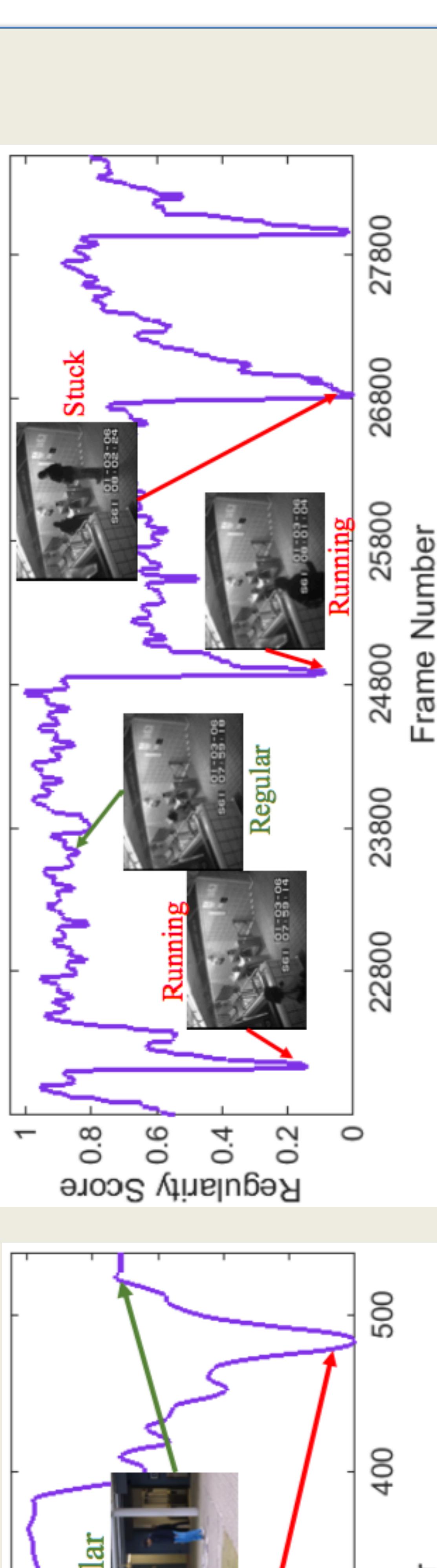
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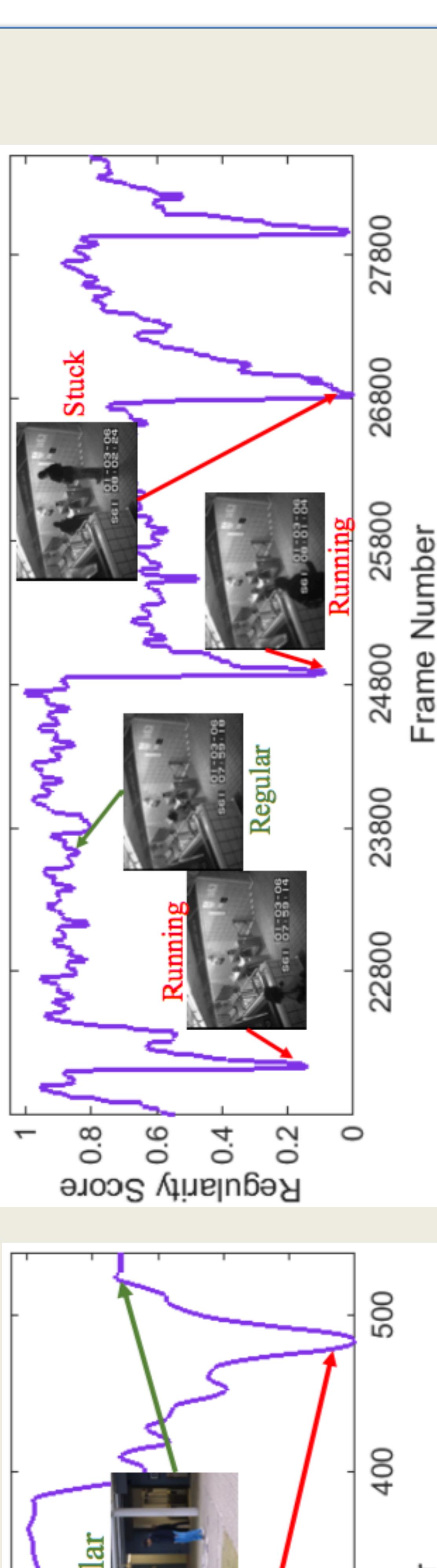
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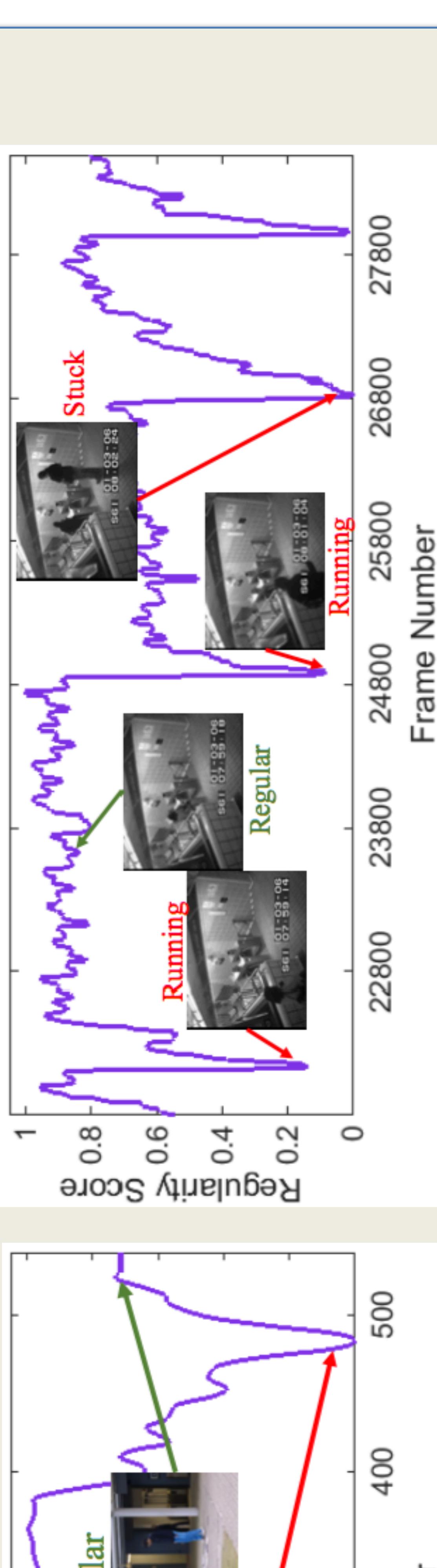
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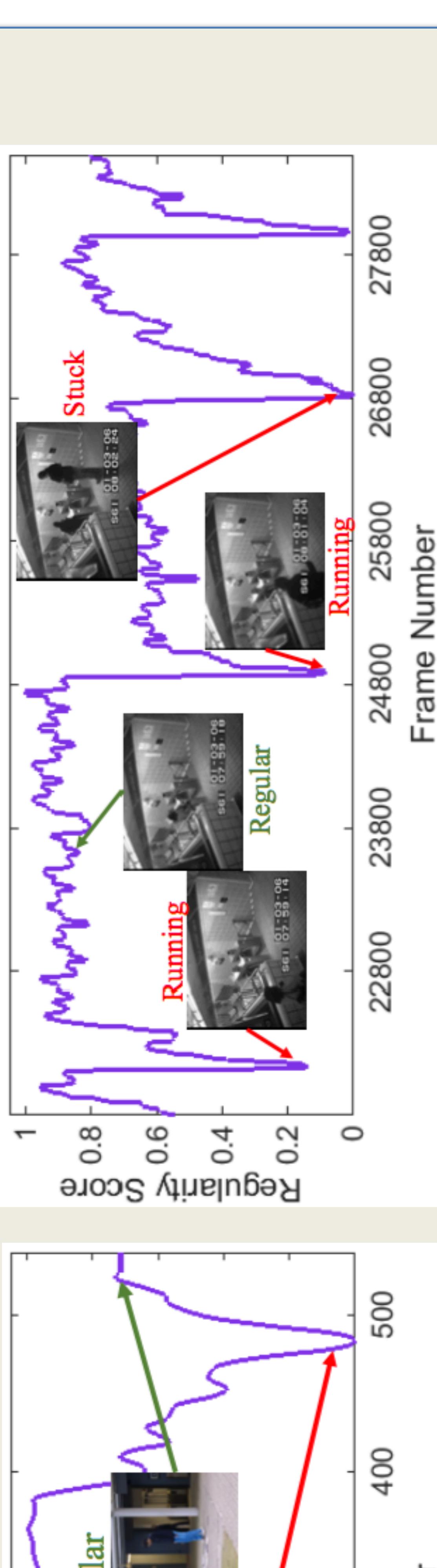
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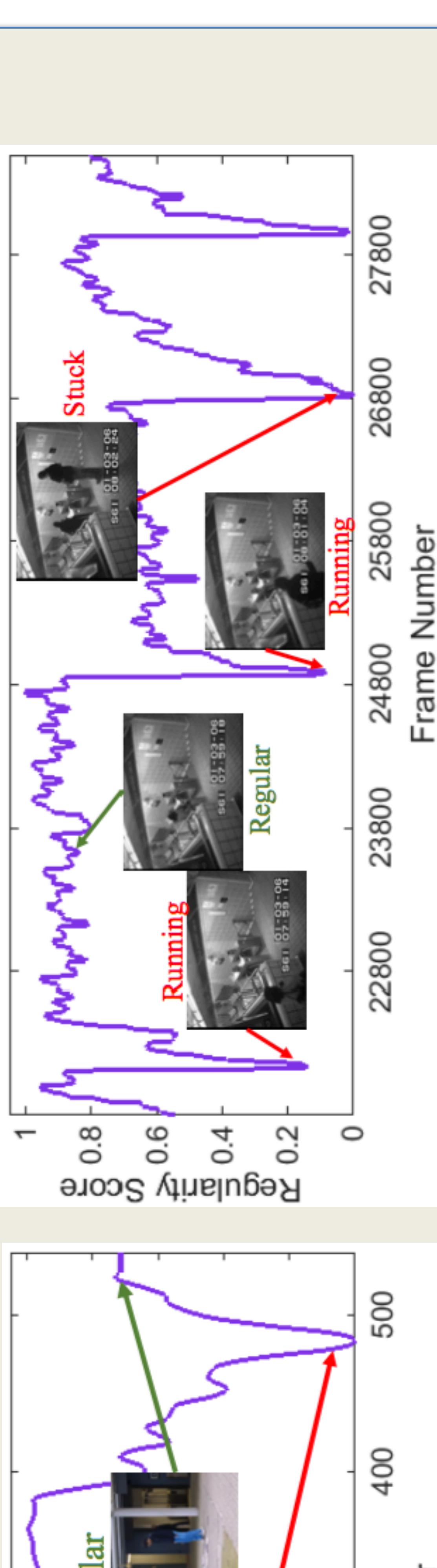
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