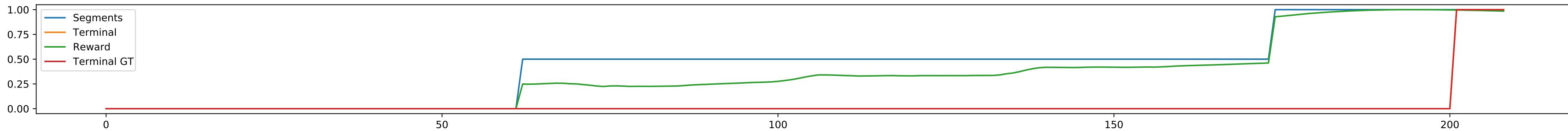
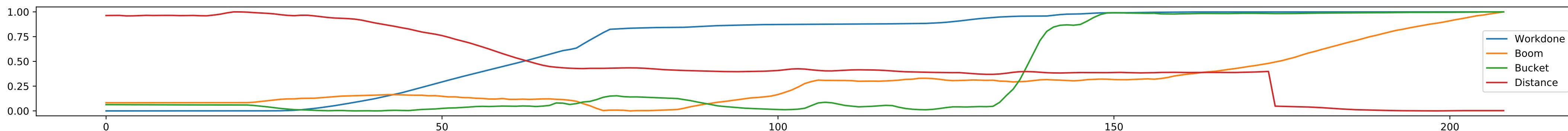
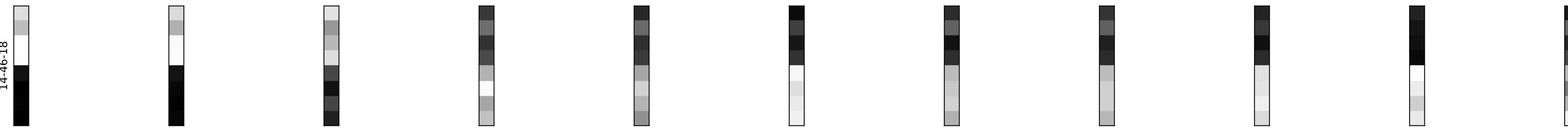
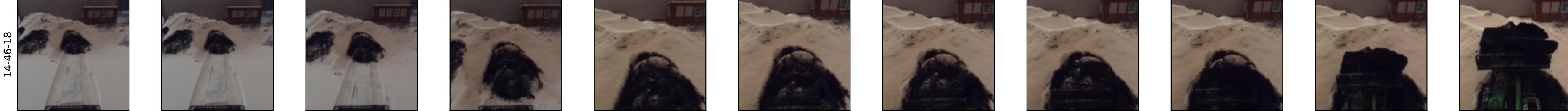


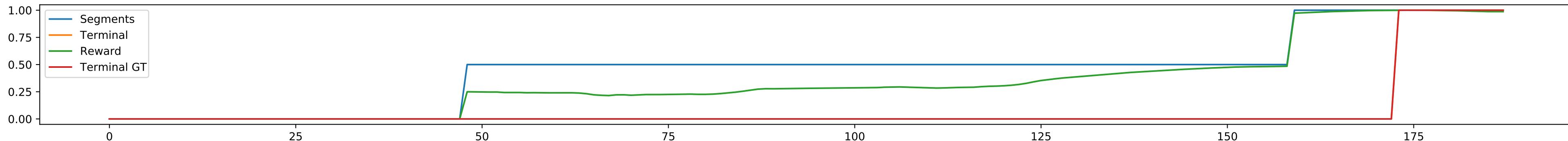
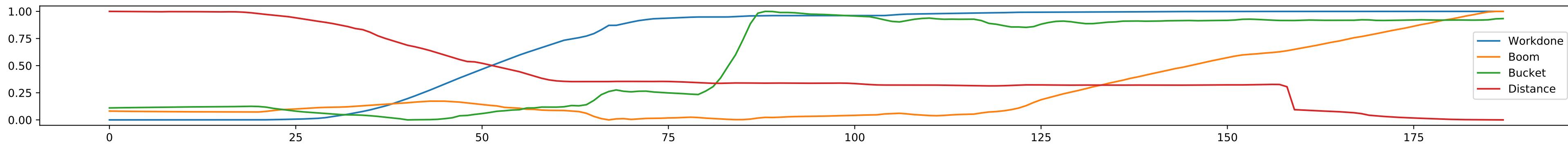
Learning Reward from Demonstrations

Training Data		Sensor Values	Clustering & Classification	Reward
80 % of positive demos: mix of winter and autumn	Boom angle, Bucket angle, Distance to the pile, Segment, Reward	Difference R_max and Distance to the next cluster center	K-means clustering and KNN Classifier	20 % of positive demos: mix of winter and autumn

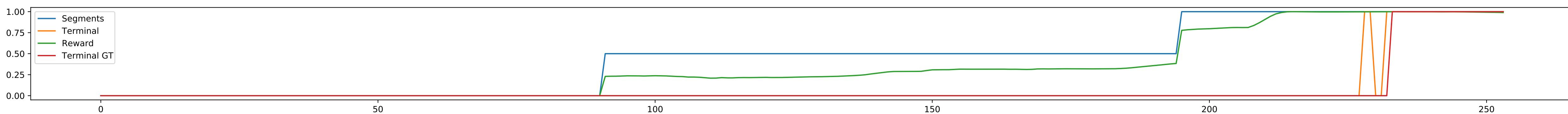
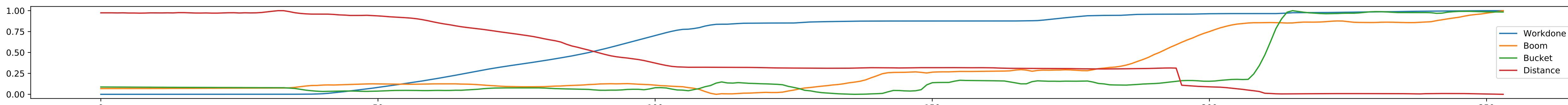
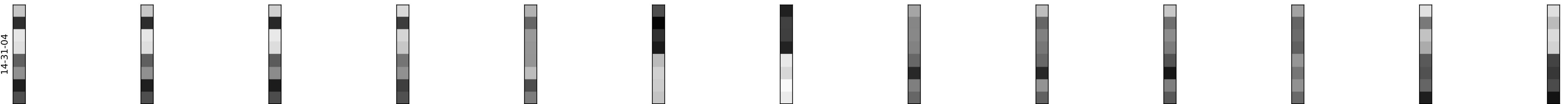
winter - 14-46-18



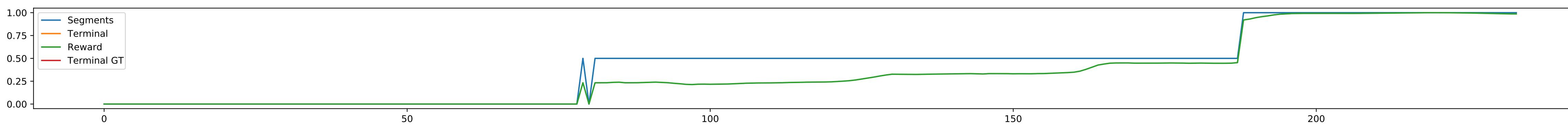
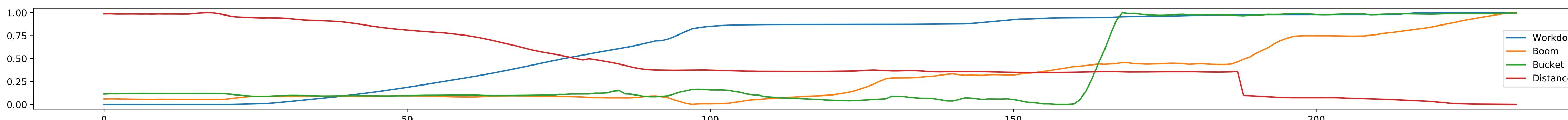
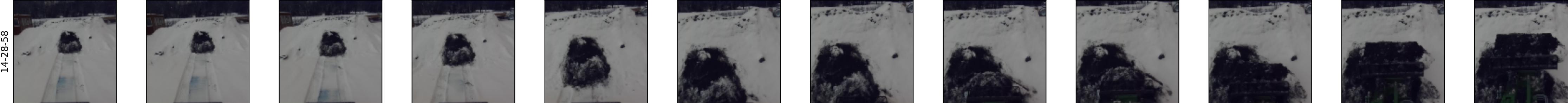
winter - 14-40-52



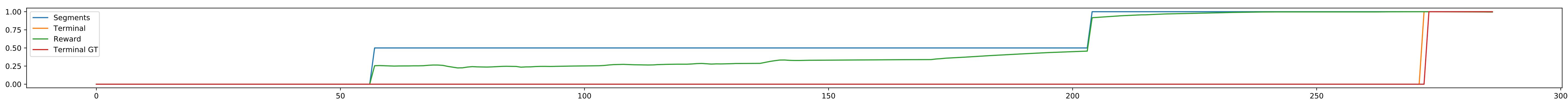
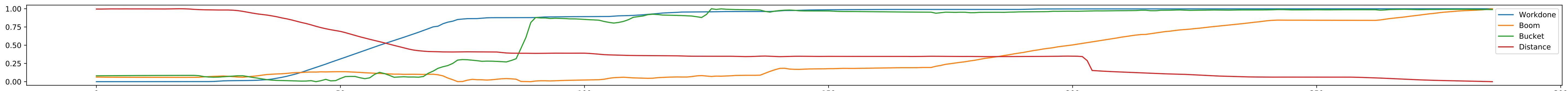
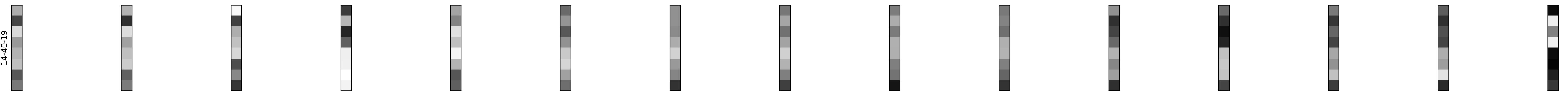
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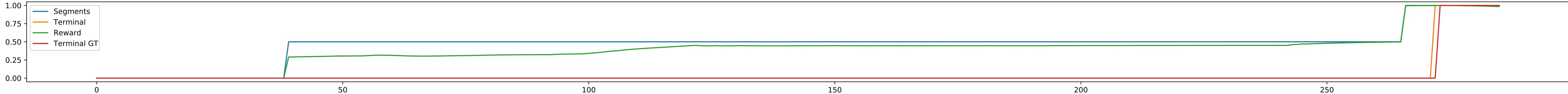
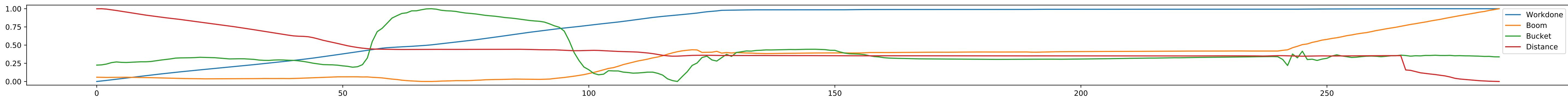
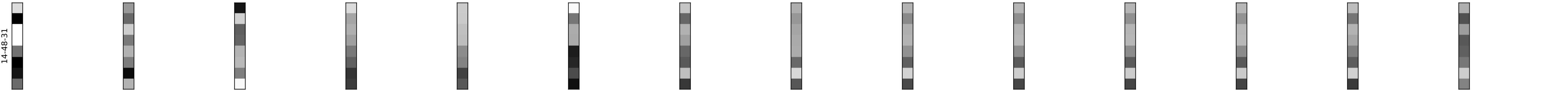
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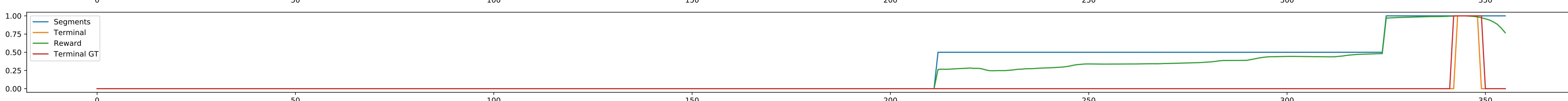
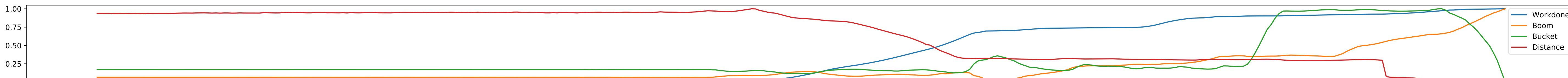
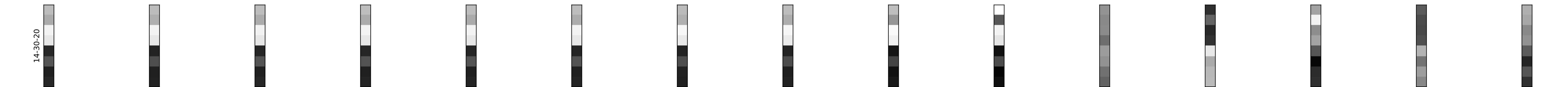
winter - 14-40-19



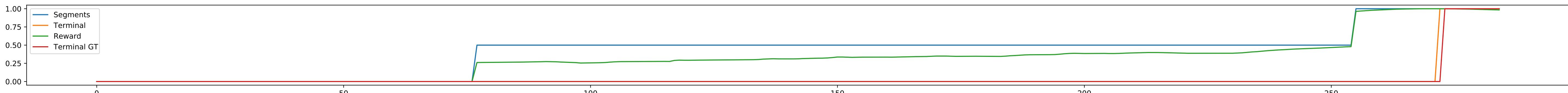
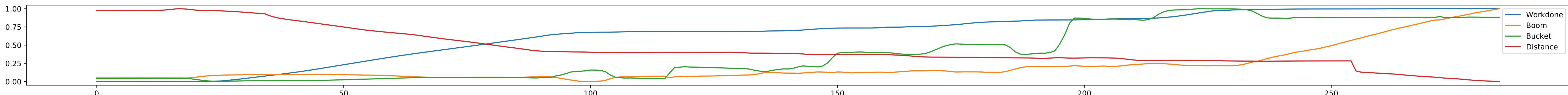
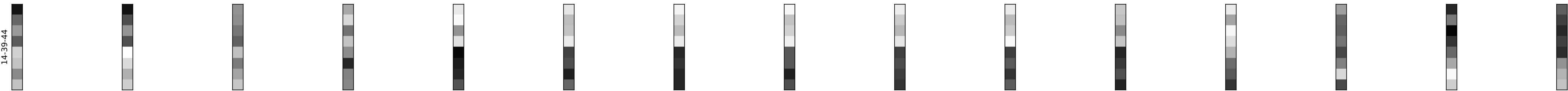
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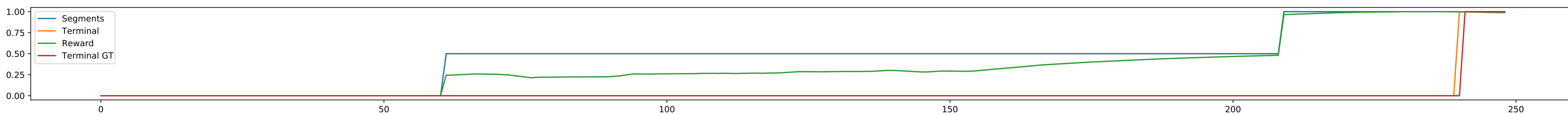
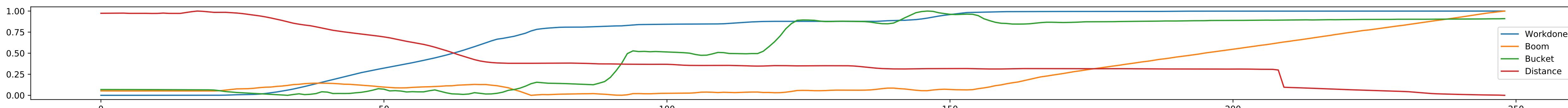
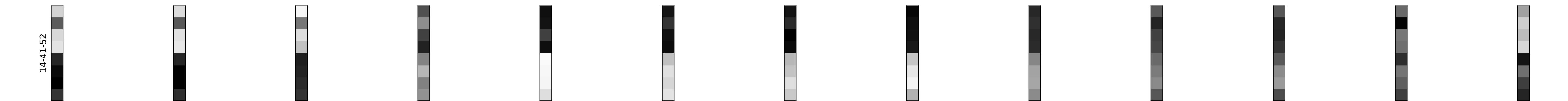
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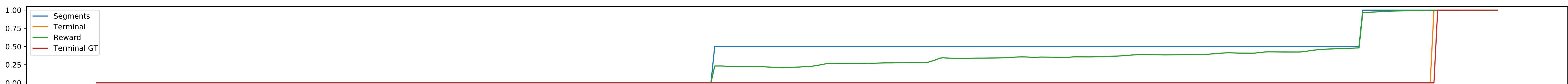
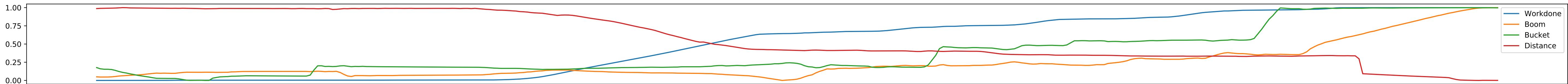
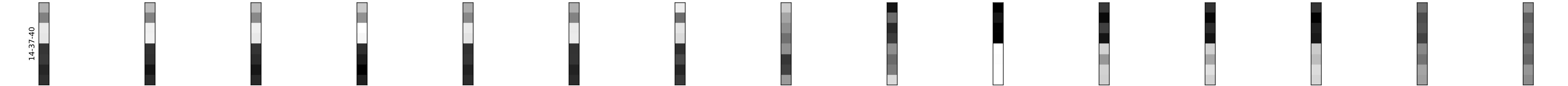
winter - 14-39-44



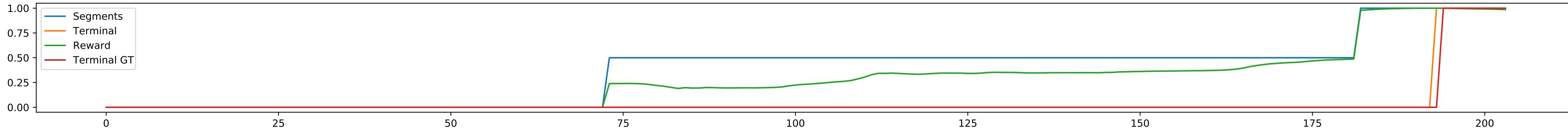
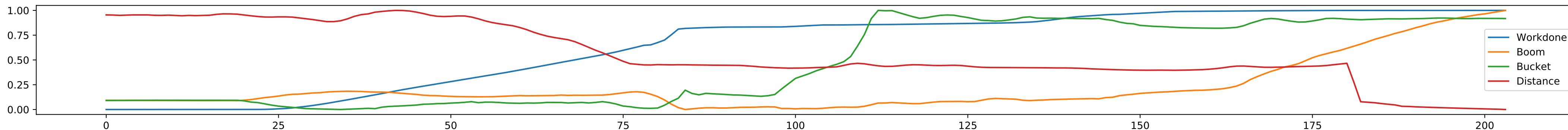
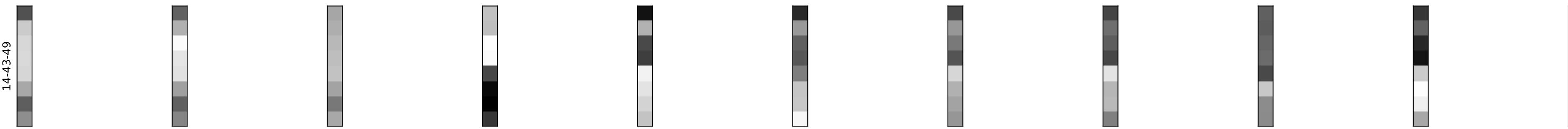
winter - 14-41-52



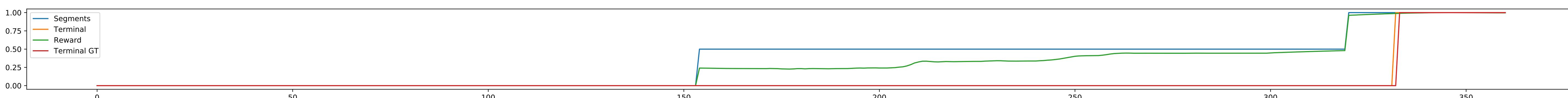
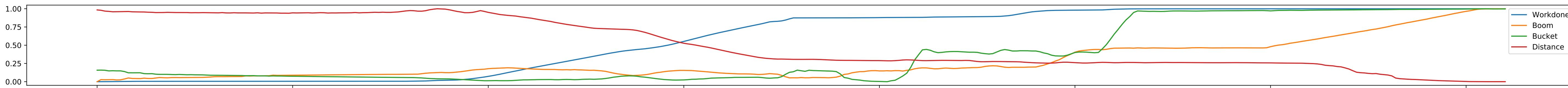
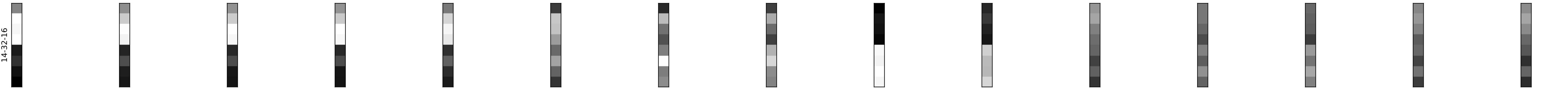
winter - 14-37-40



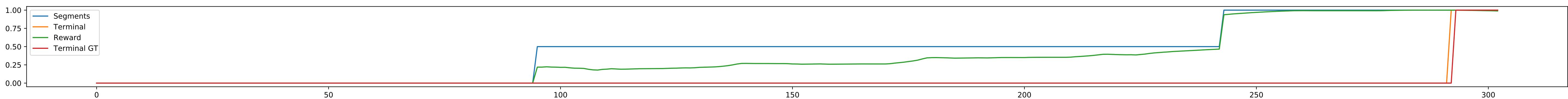
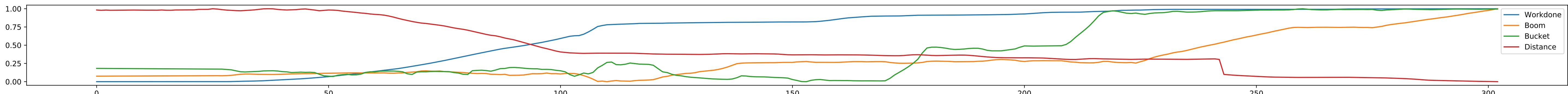
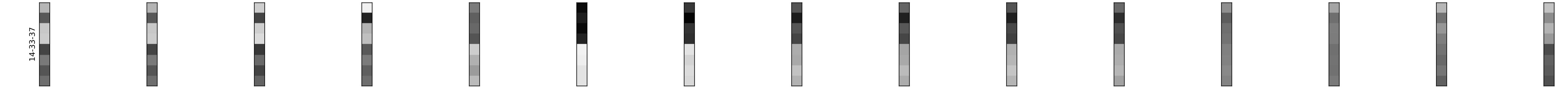
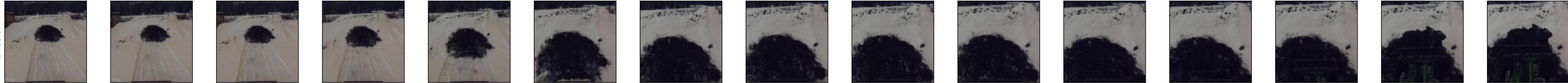
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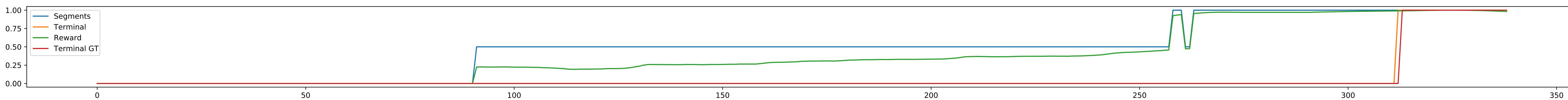
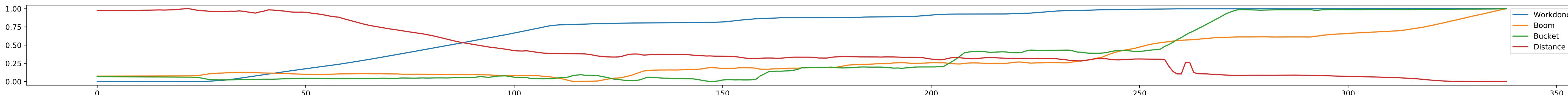
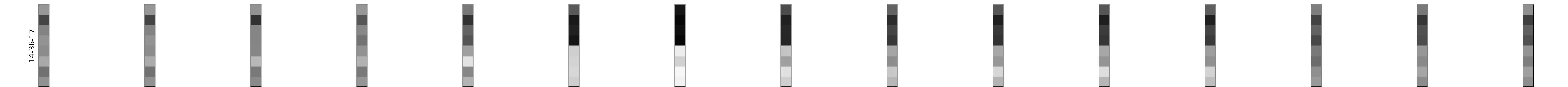
winter - 14-32-16



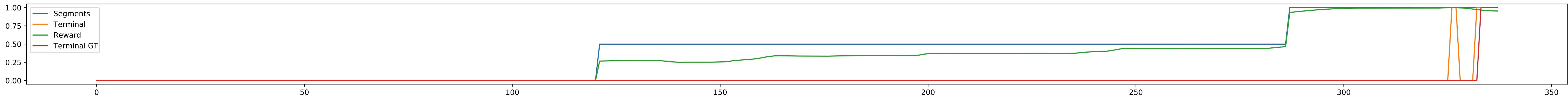
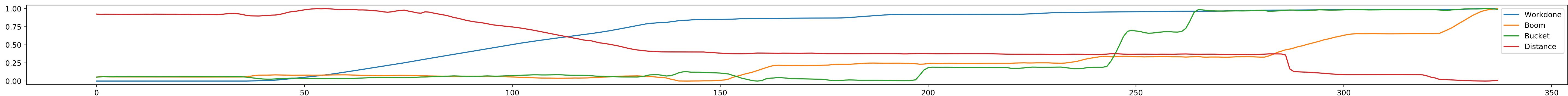
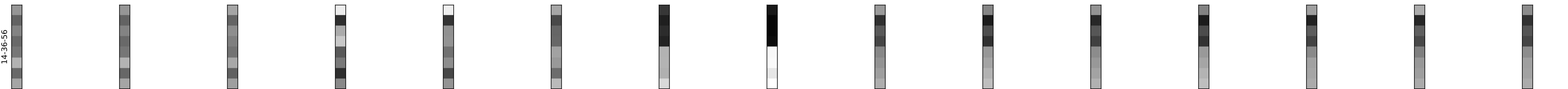
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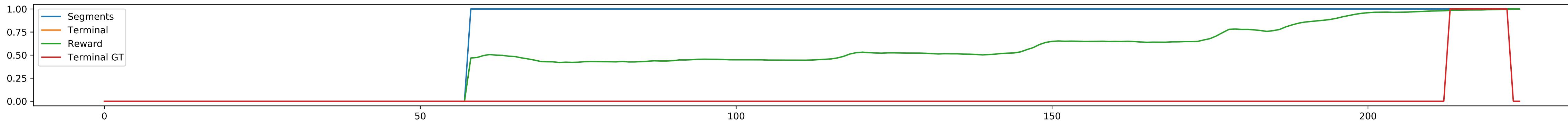
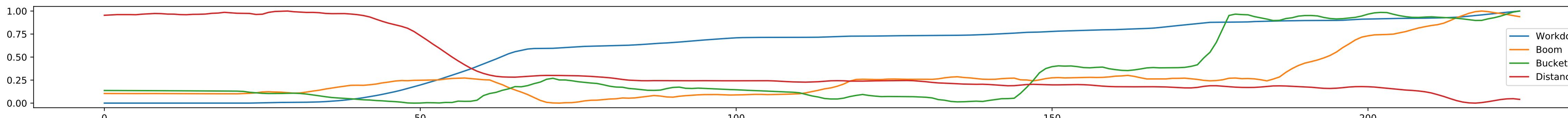
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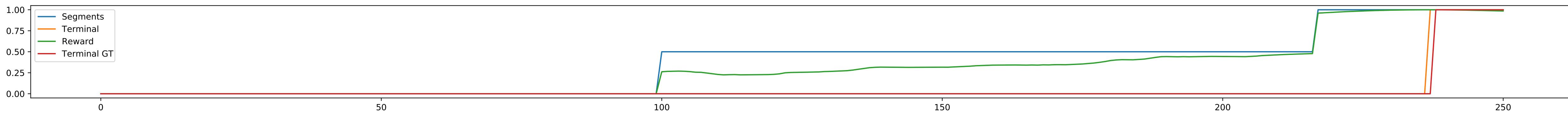
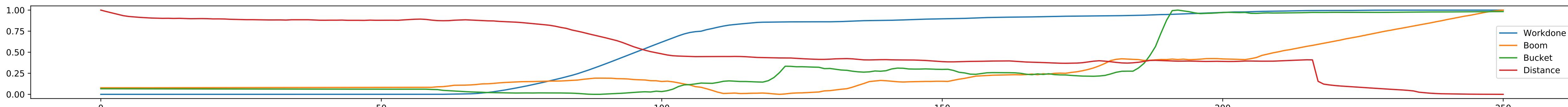
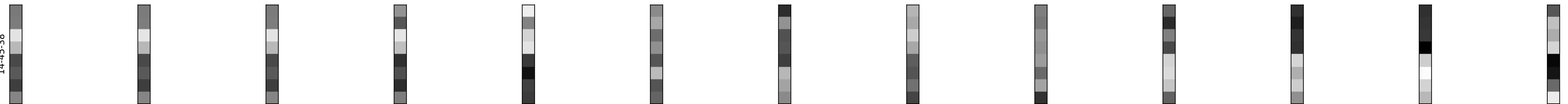
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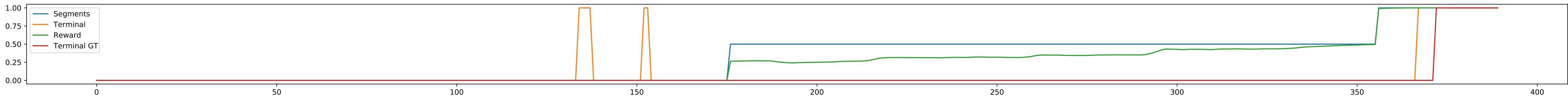
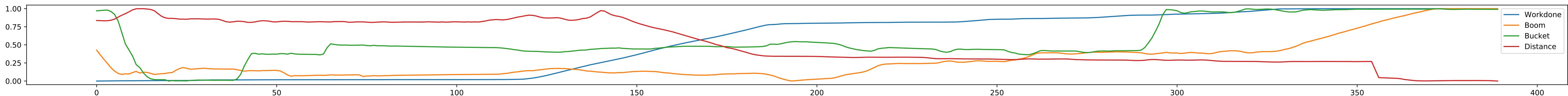
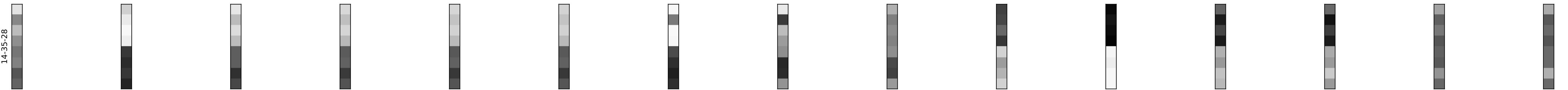
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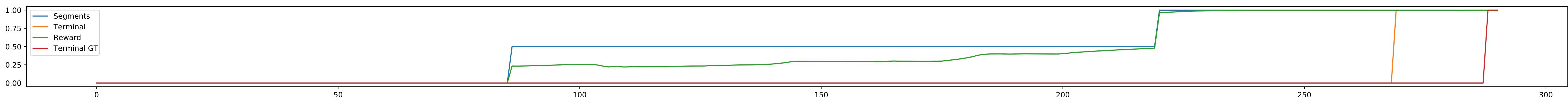
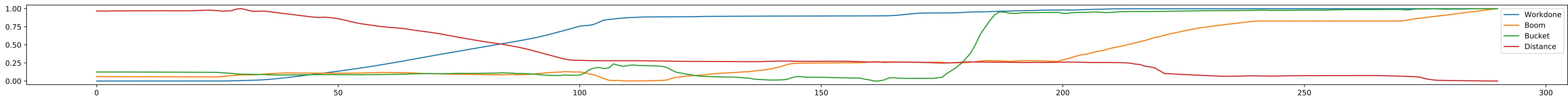
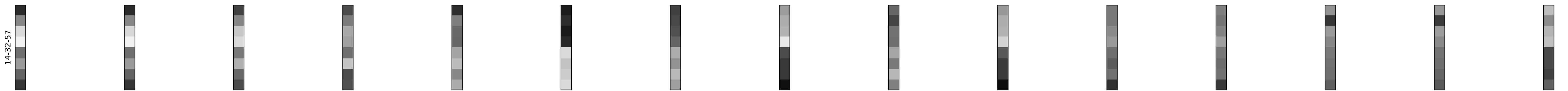
winter - 14-45-38



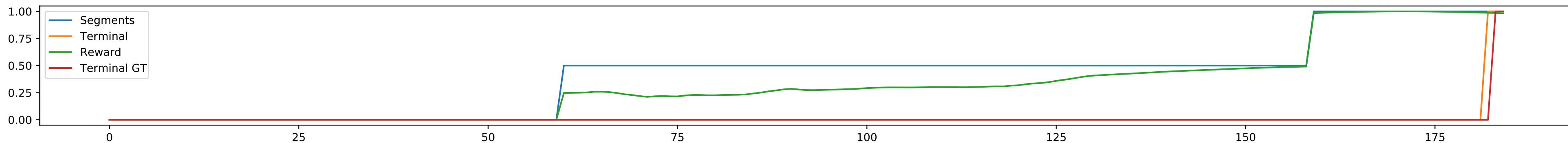
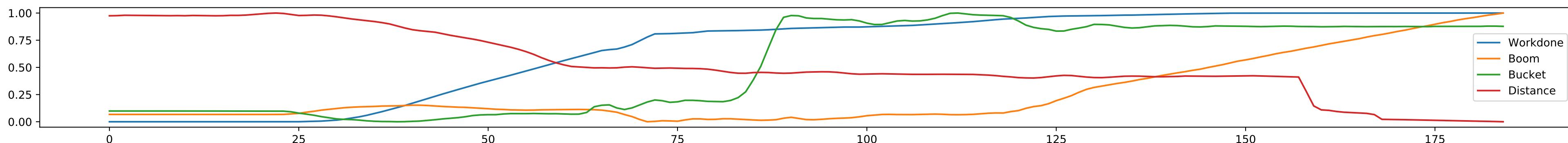
winter - 14-35-28



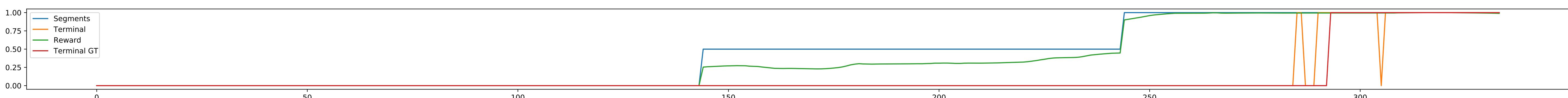
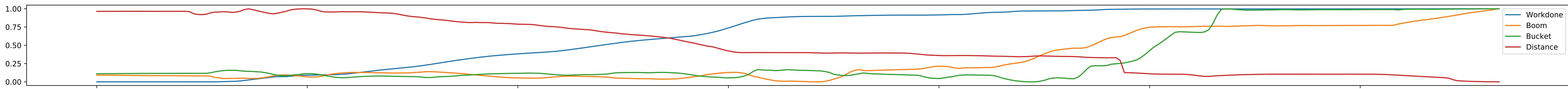
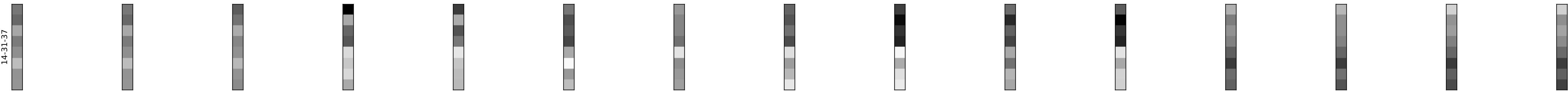
winter - 14-32-57



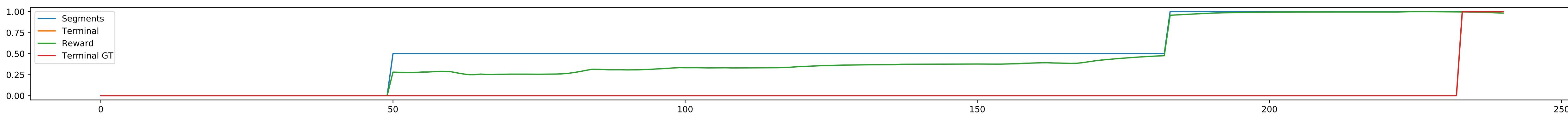
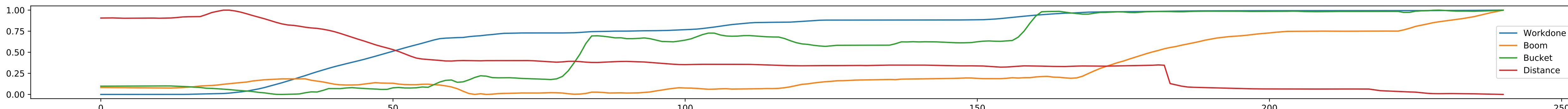
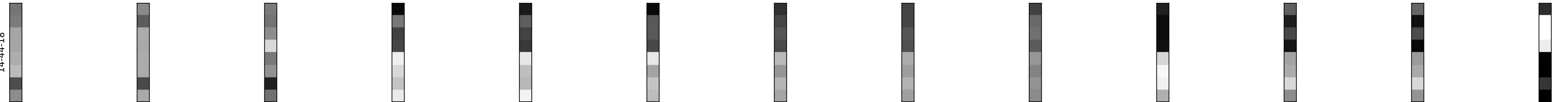
winter - 14-45-06



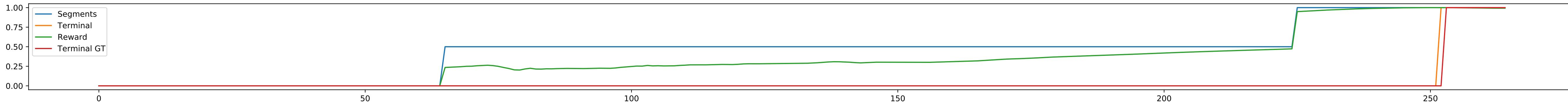
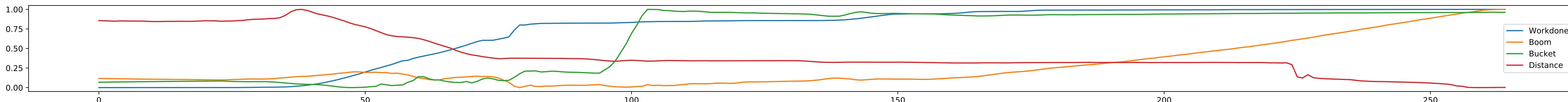
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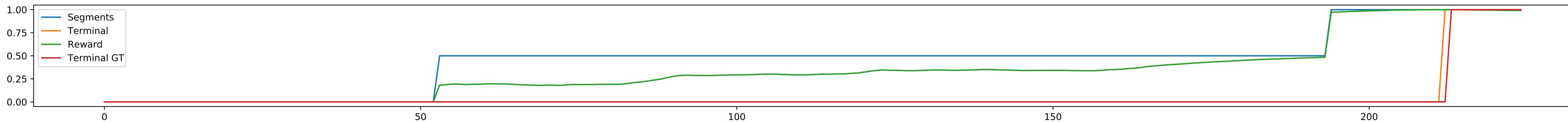
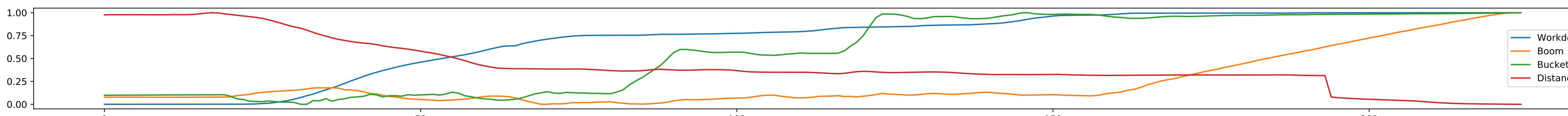
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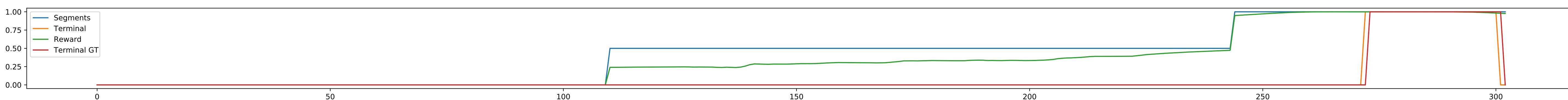
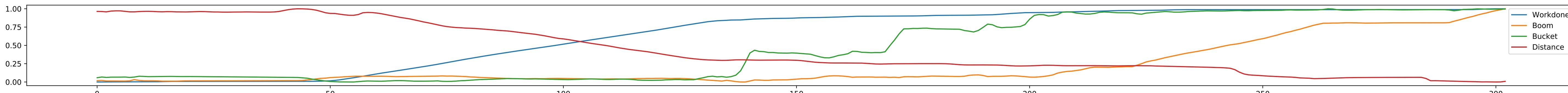
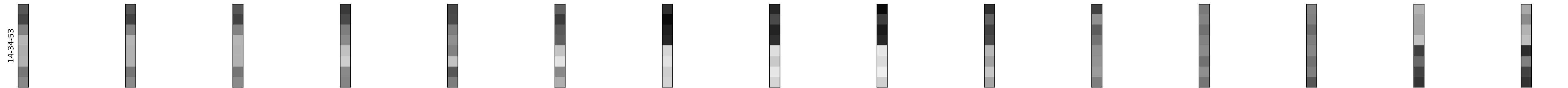
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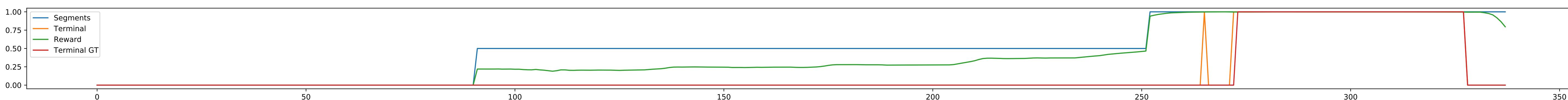
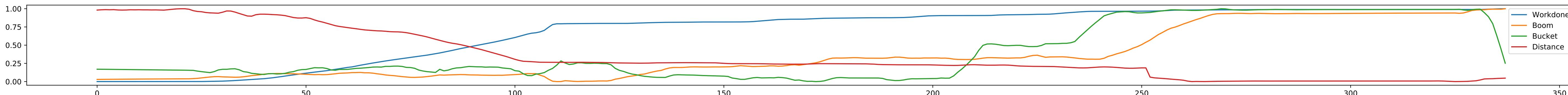
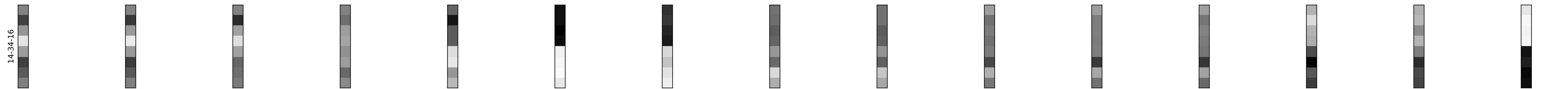
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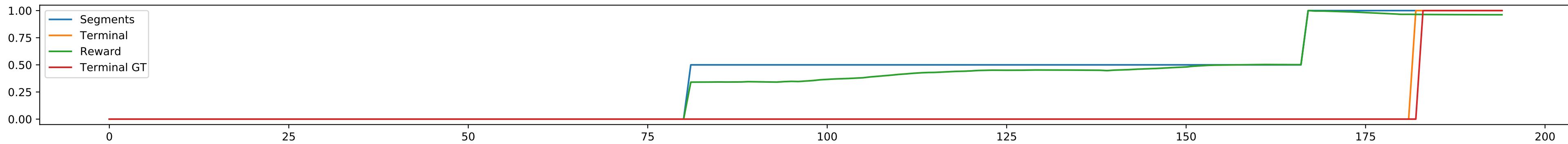
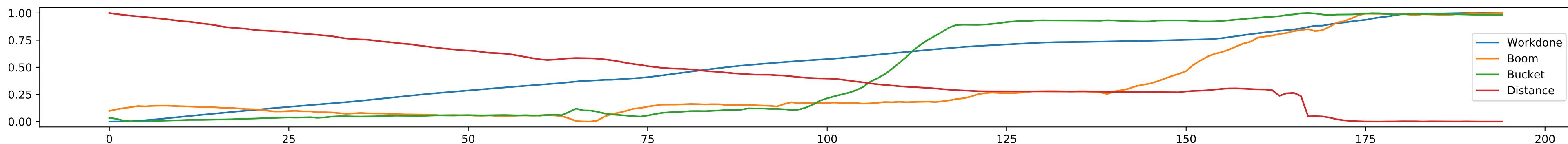
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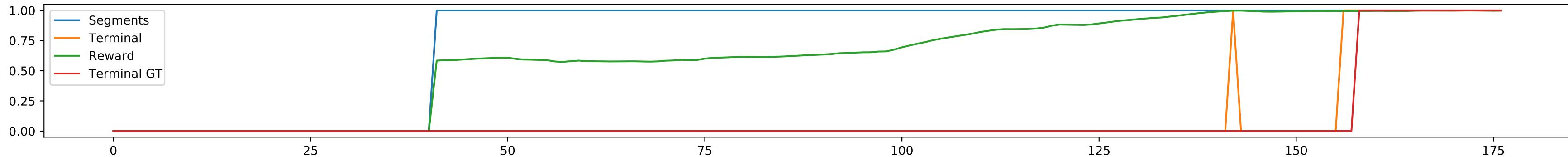
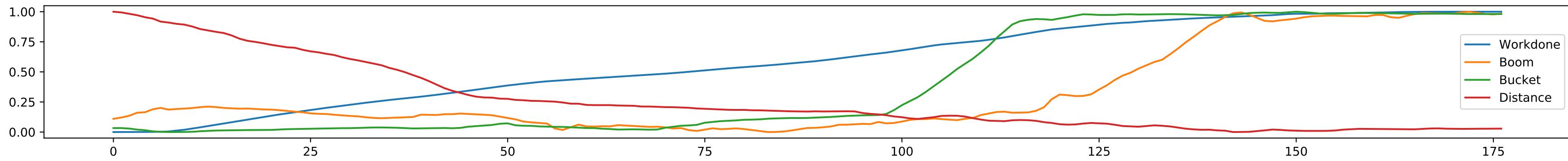
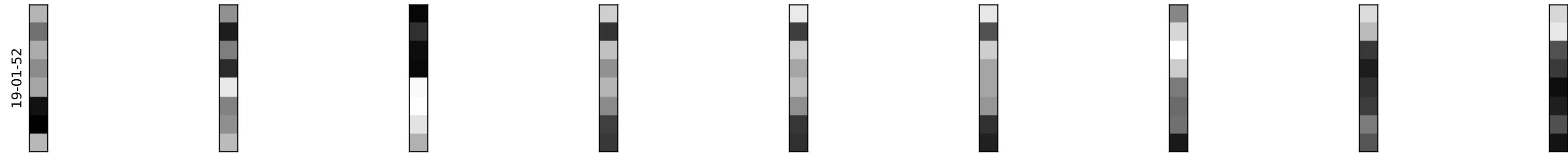
winter - 14-34-16



autumn - 16-23-38

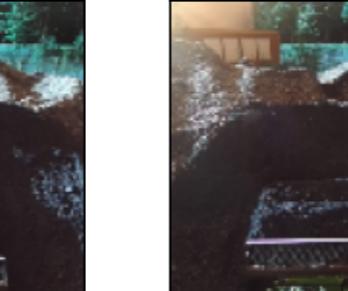


autumn - 19-01-52

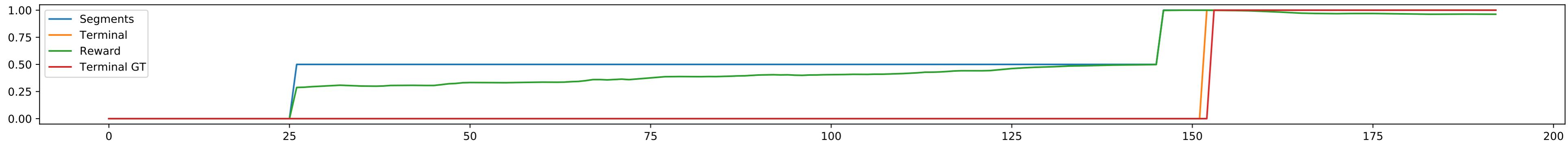
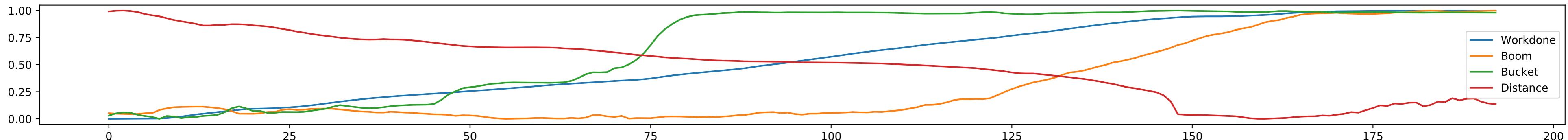
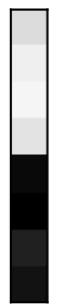
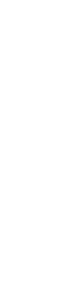
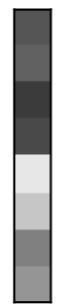


autumn - 16-39-57

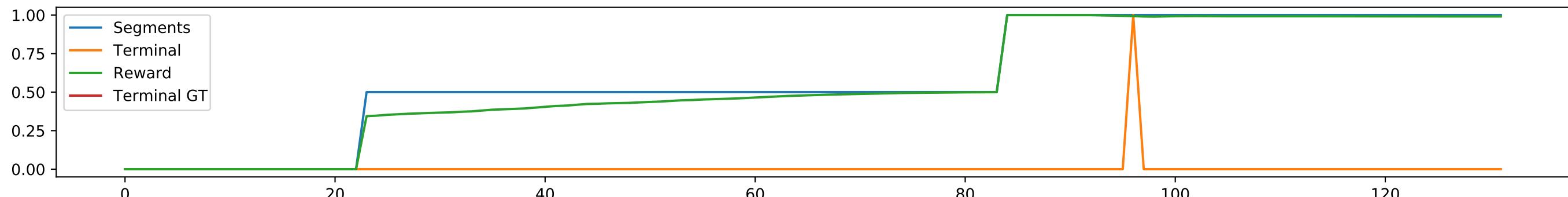
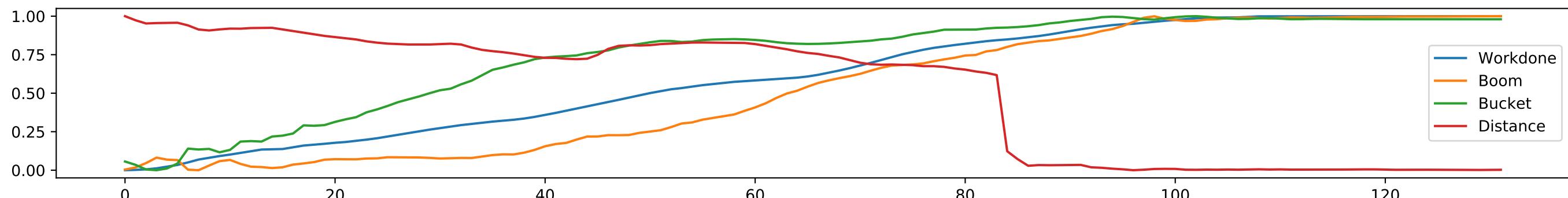
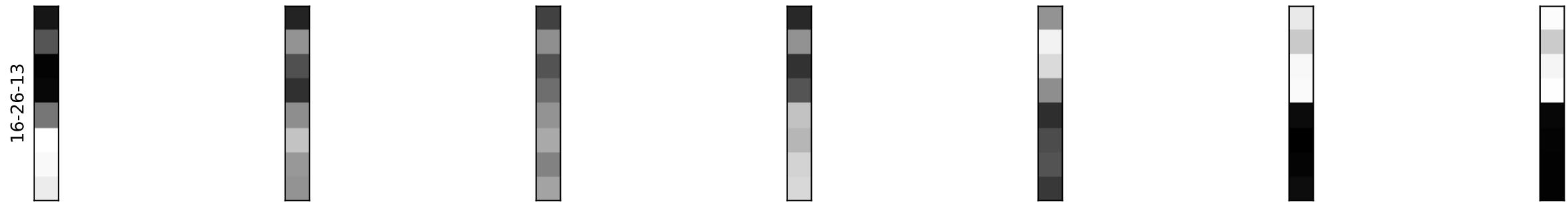
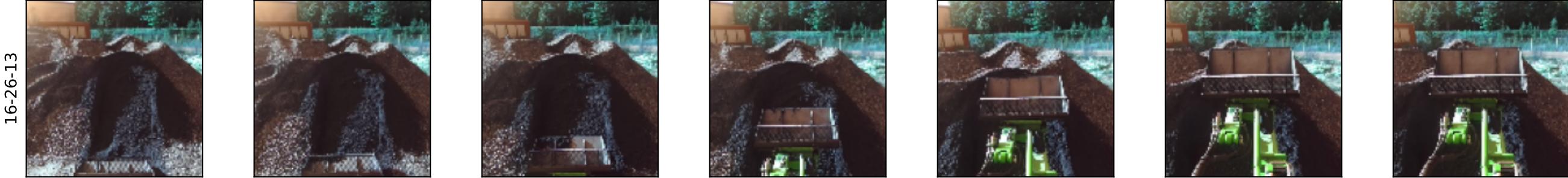
16-39-57



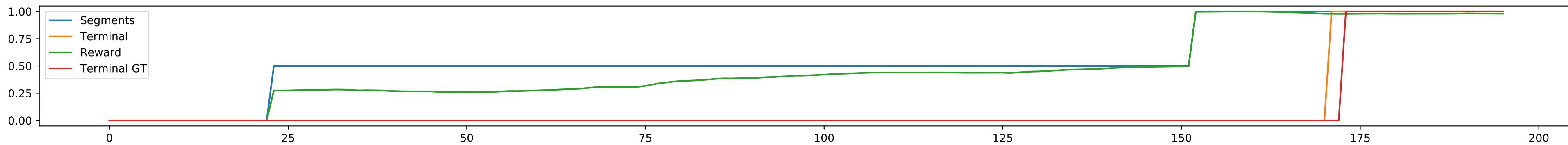
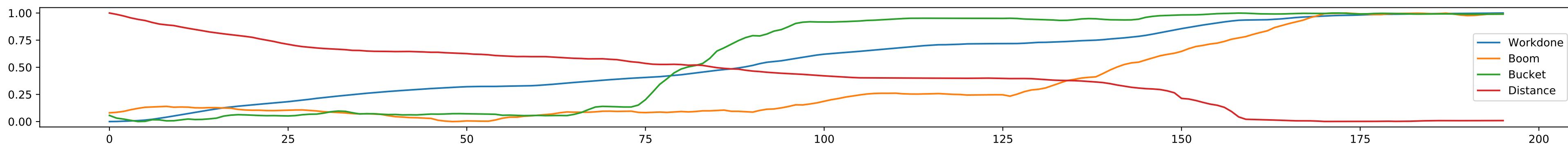
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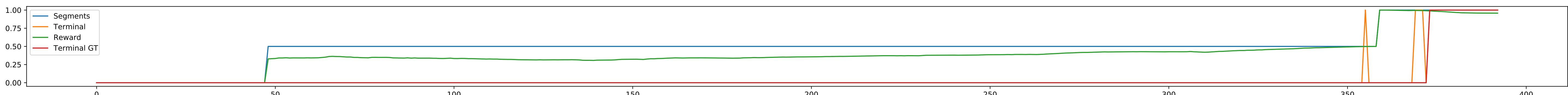
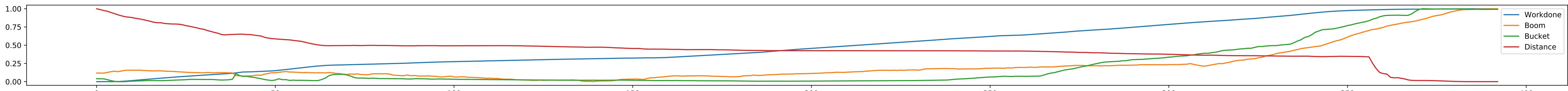
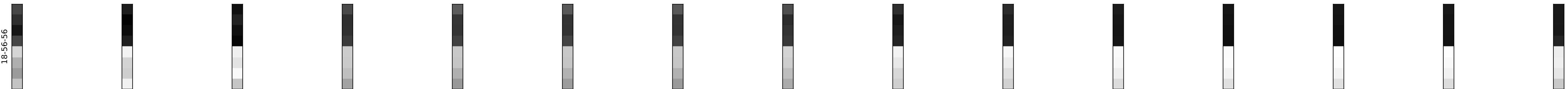
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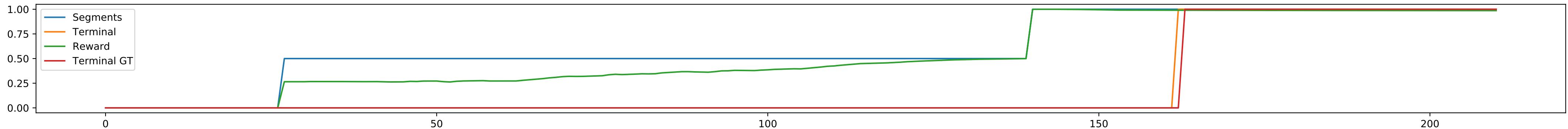
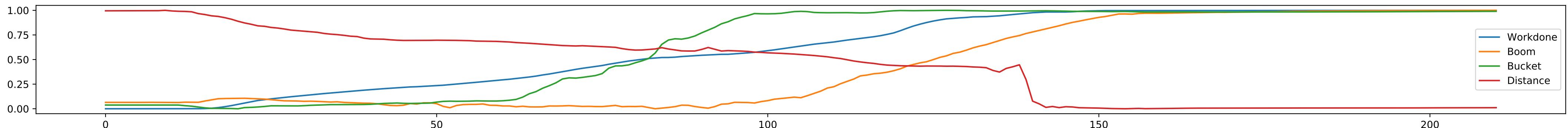
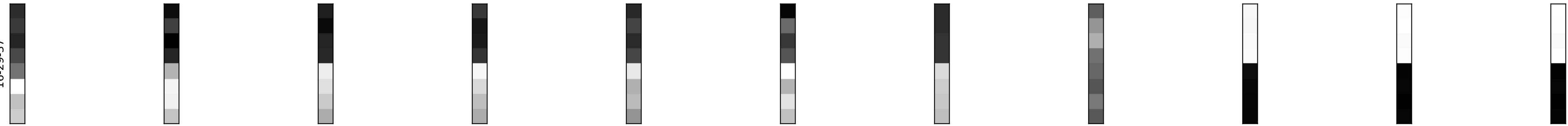
autumn - 16-31-52



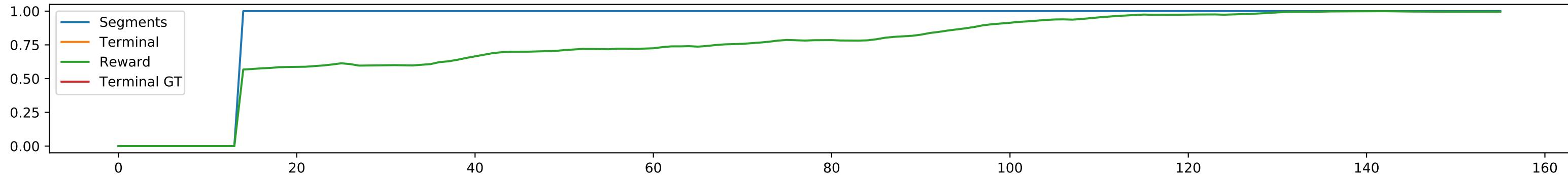
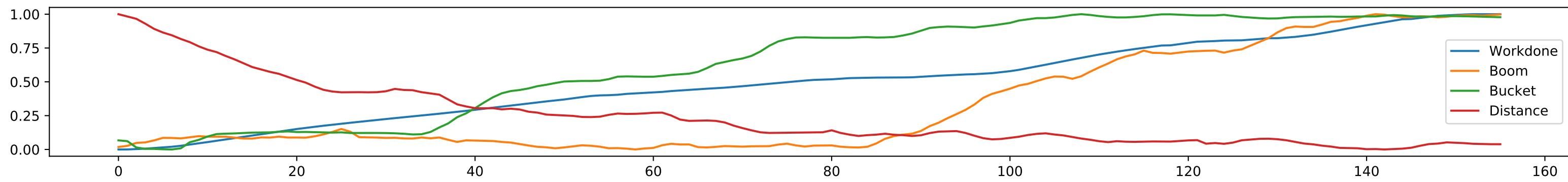
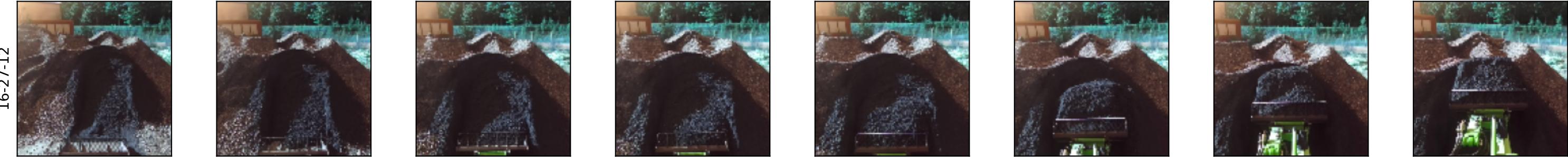
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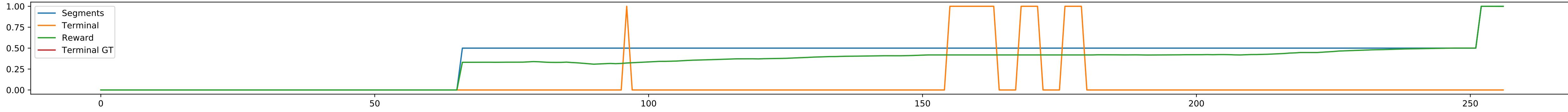
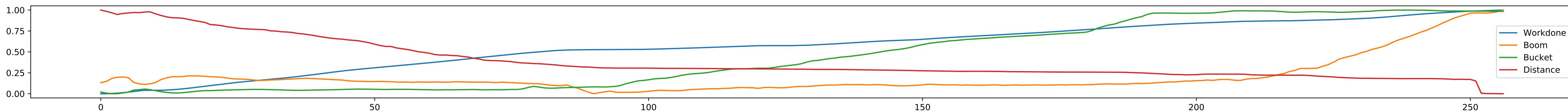
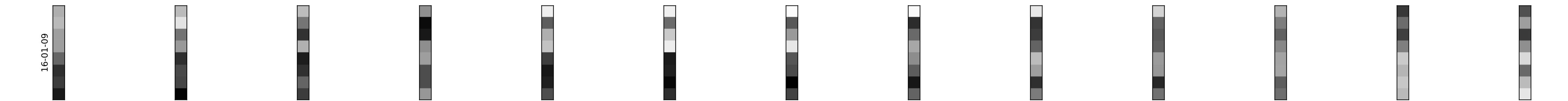
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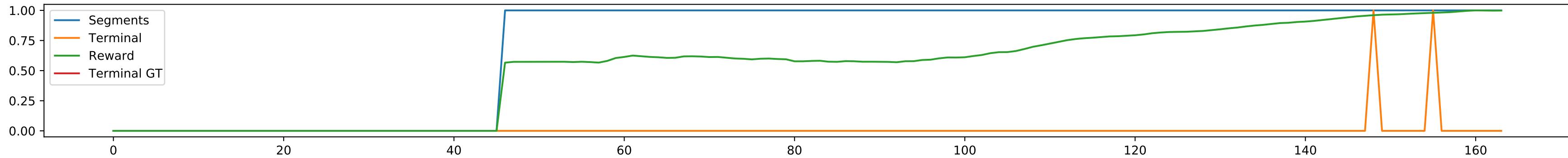
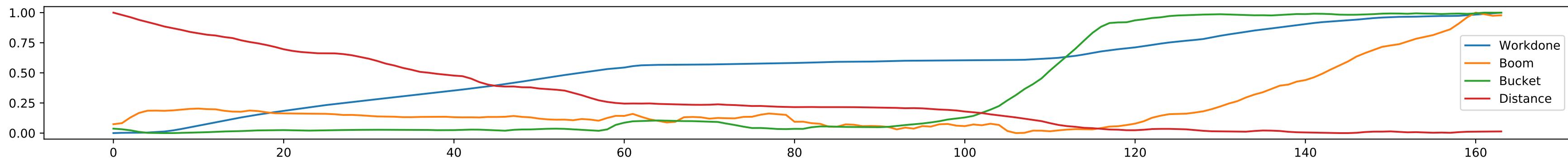
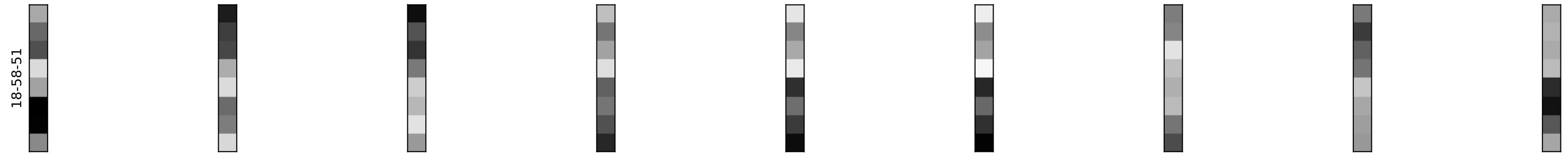
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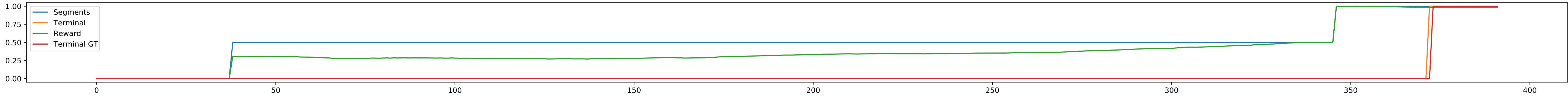
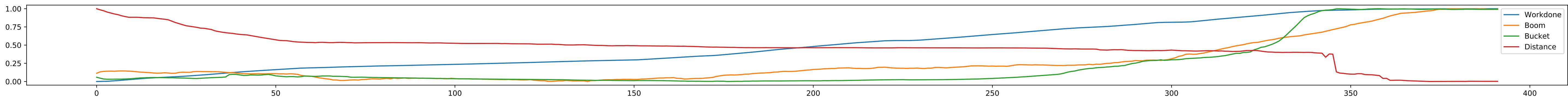
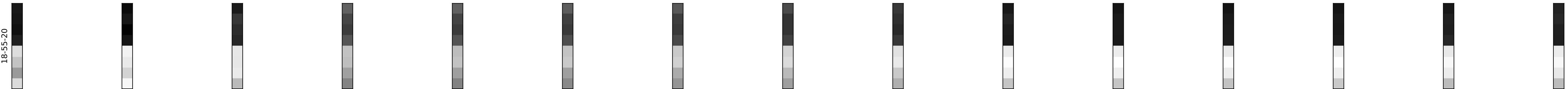
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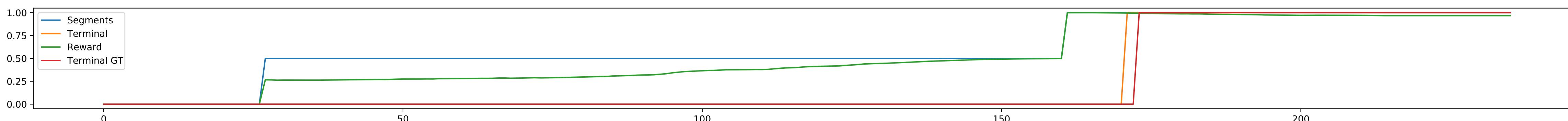
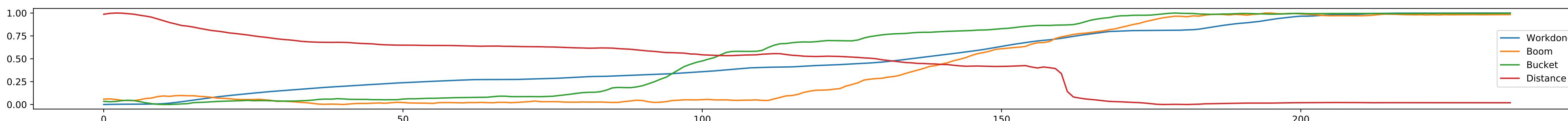
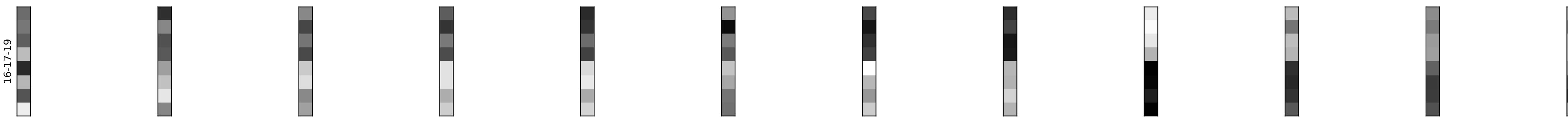
autumn - 18-58-51



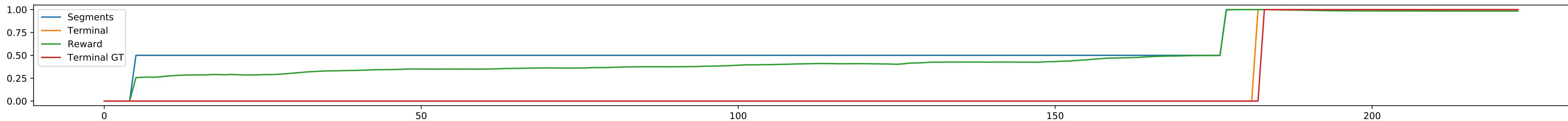
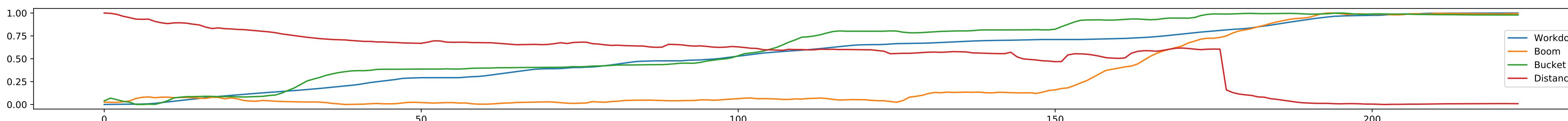
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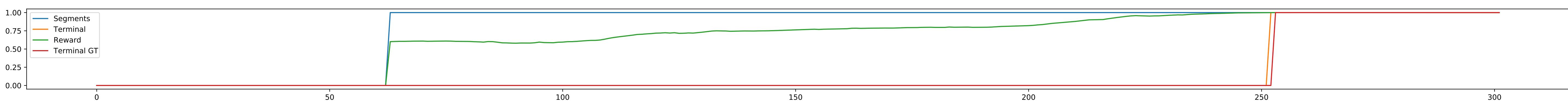
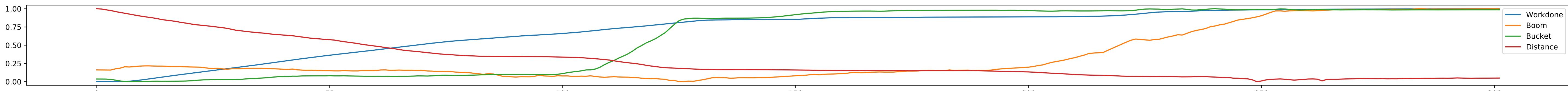
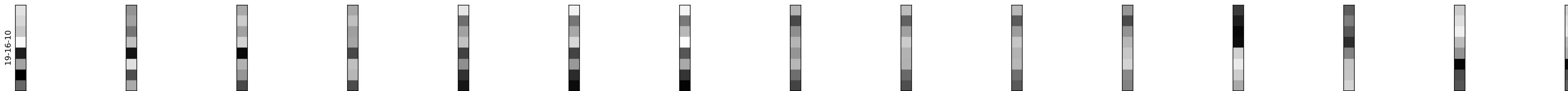
autumn - 16-17-19



autumn - 16-27-52



autumn - 19-16-10

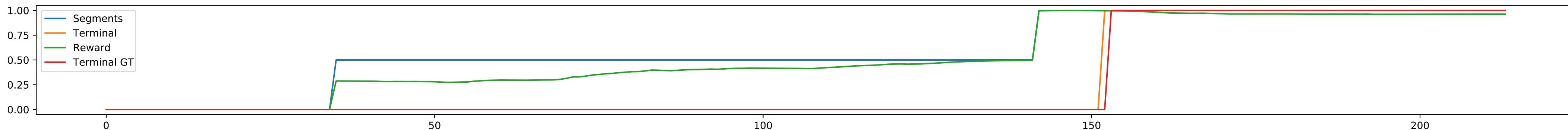
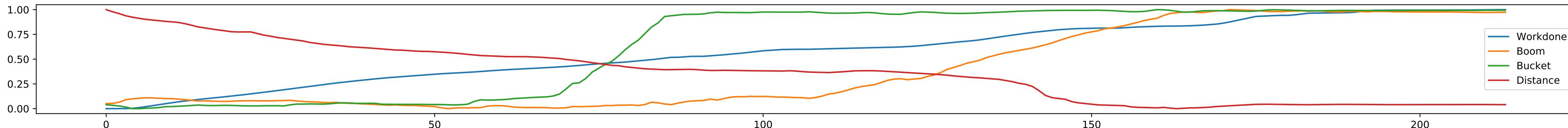
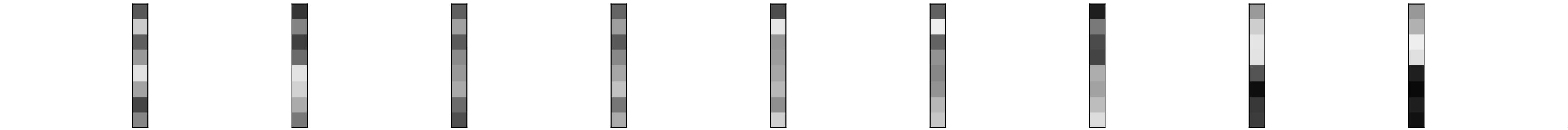


autumn - 16-34-22

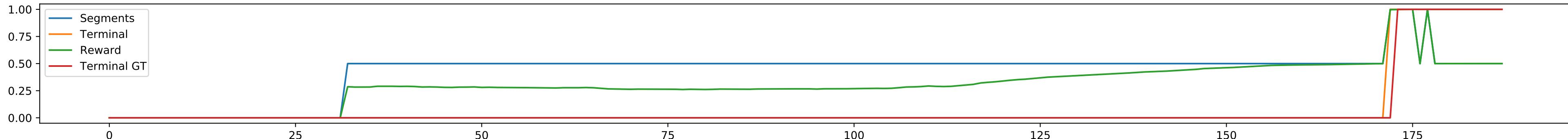
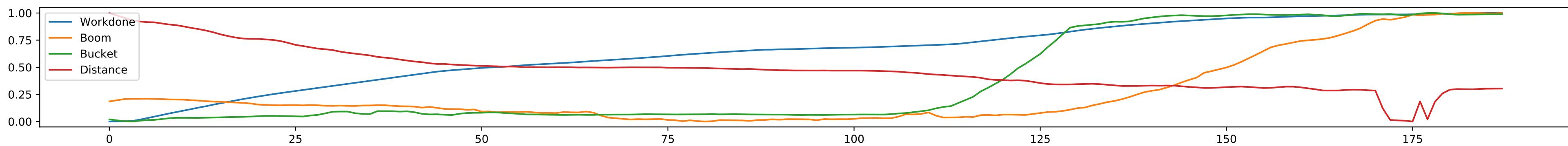
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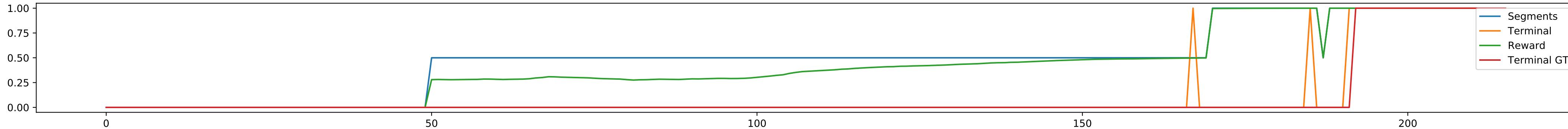
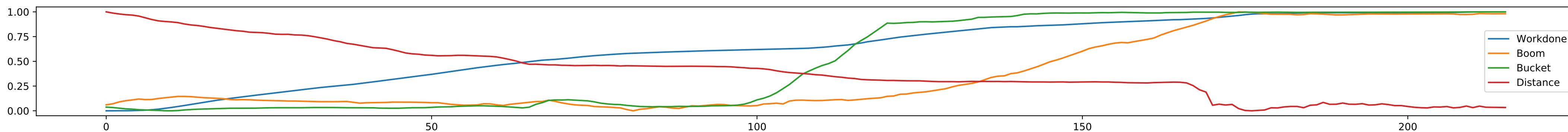
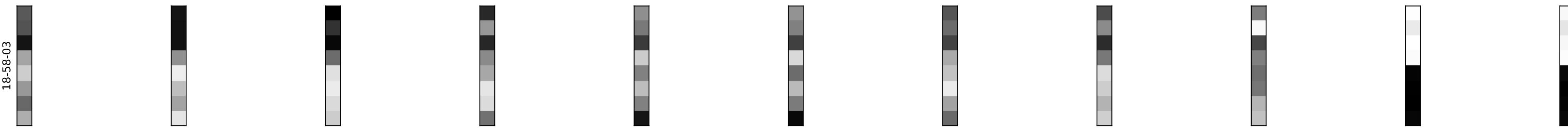
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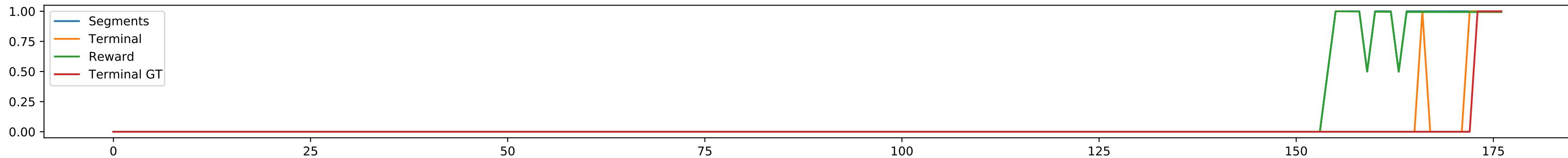
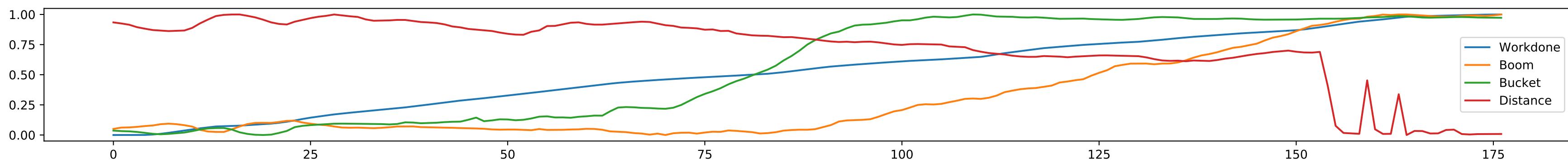
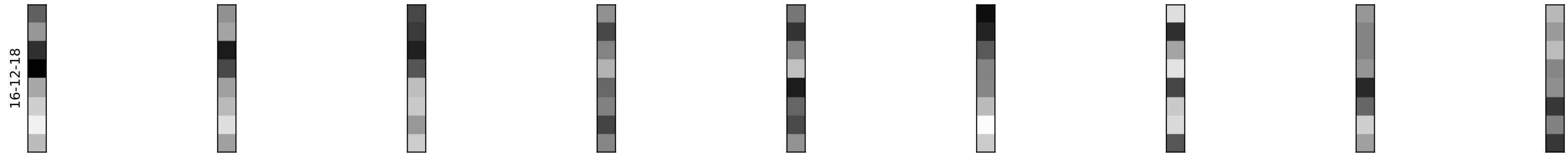
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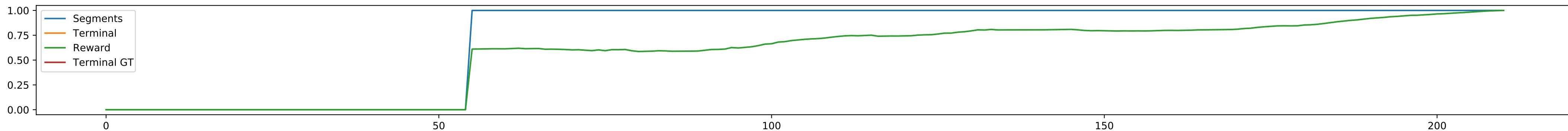
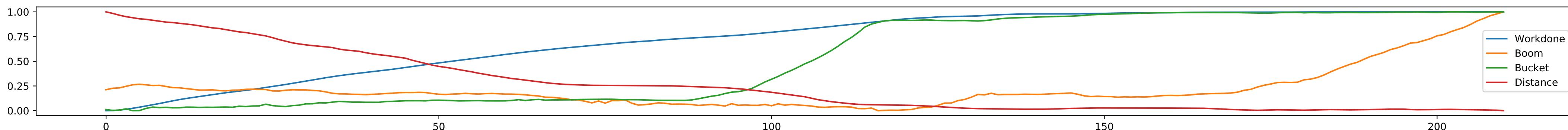
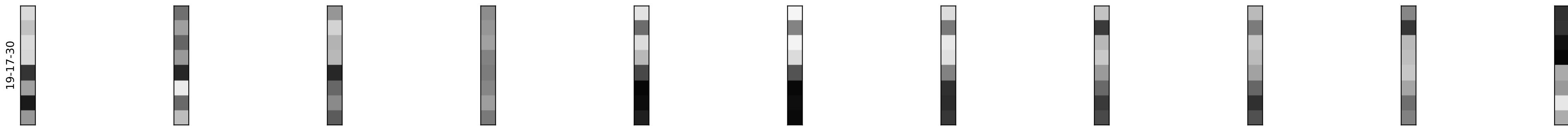
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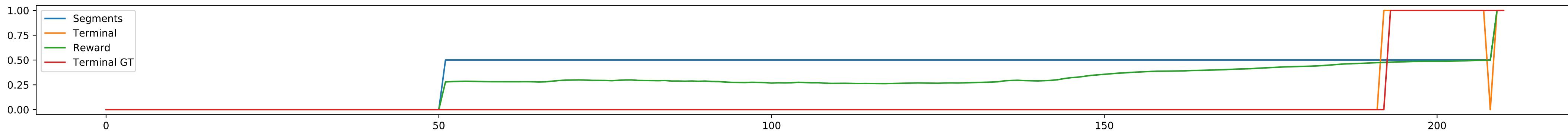
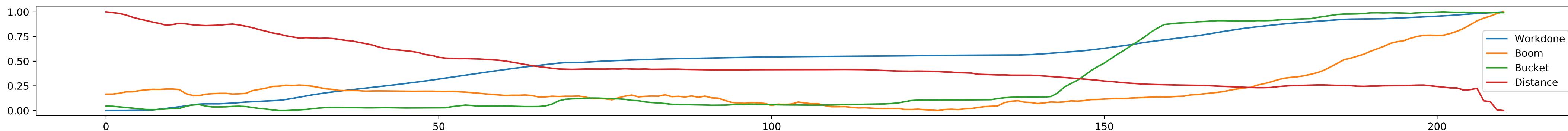
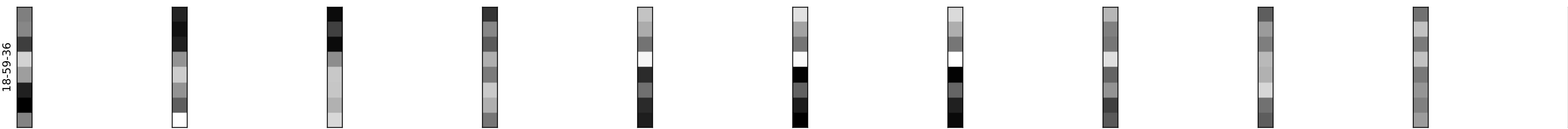
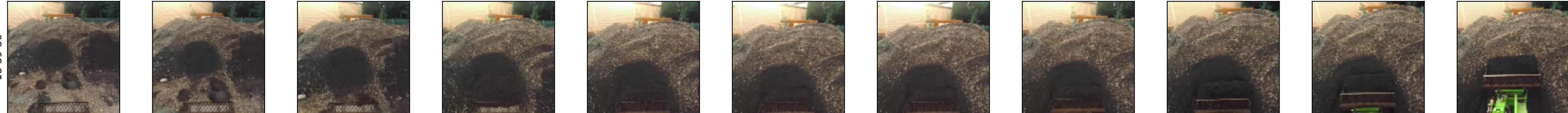
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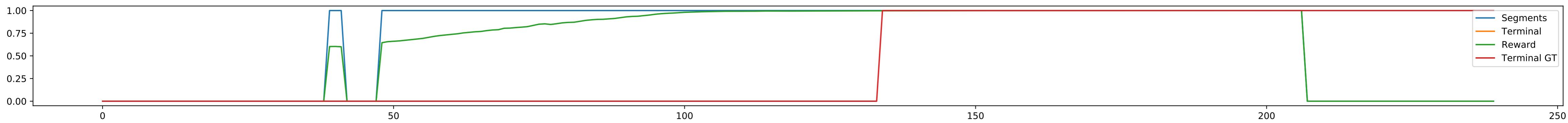
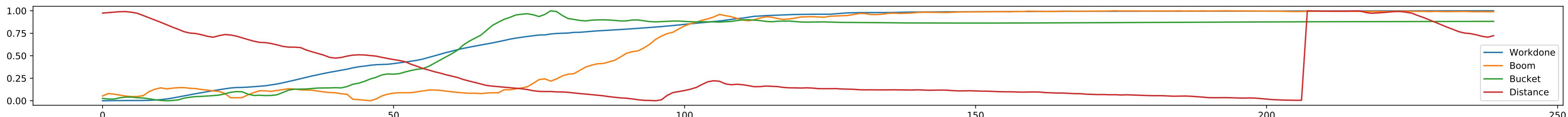
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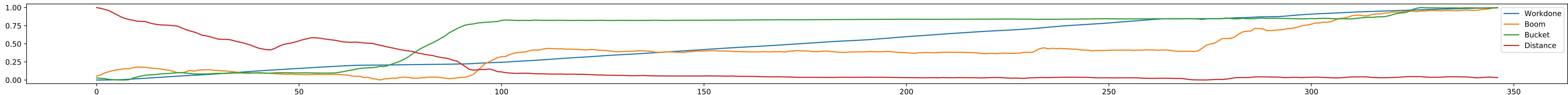
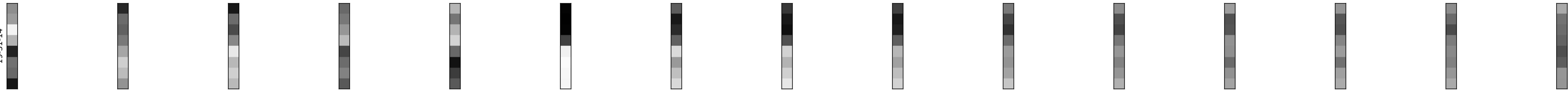
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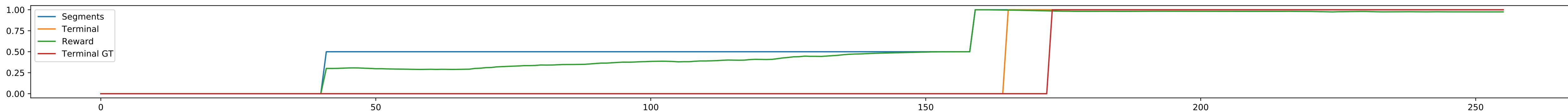
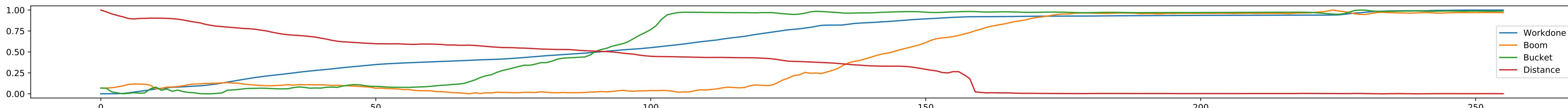
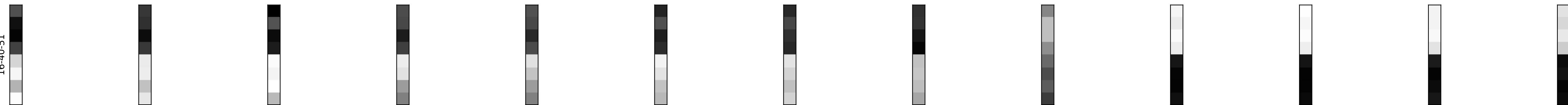
autumn - 18-50-54



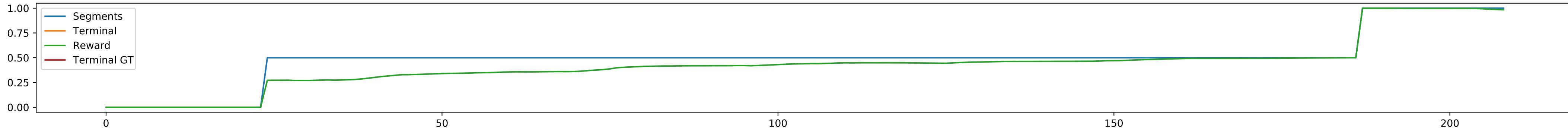
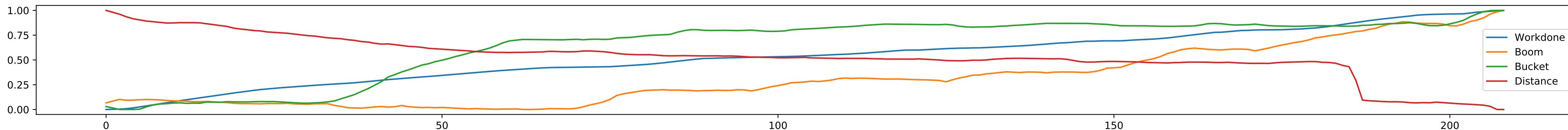
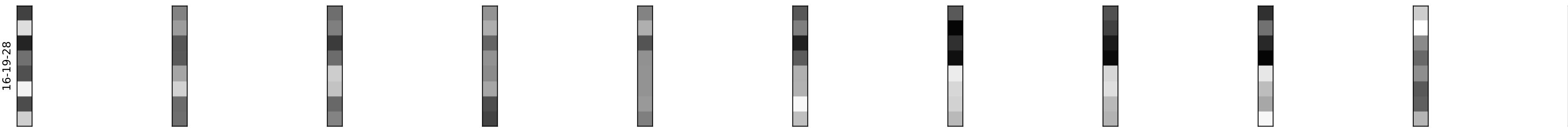
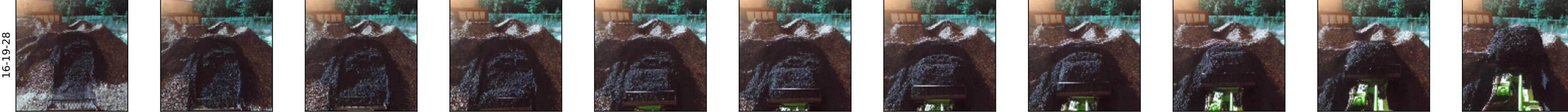
autumn - 19-31-14



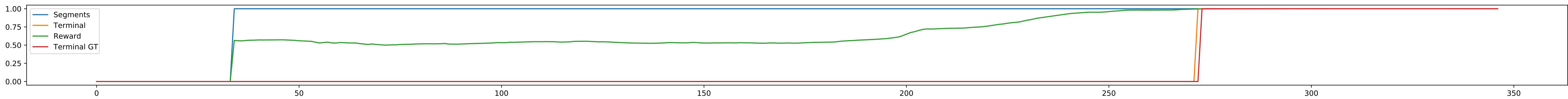
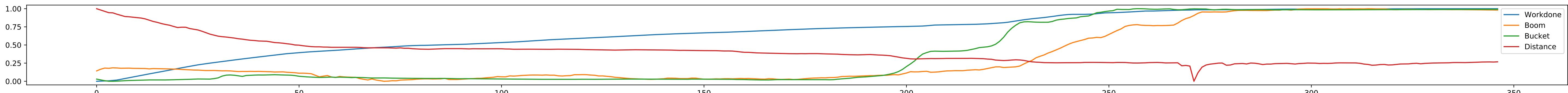
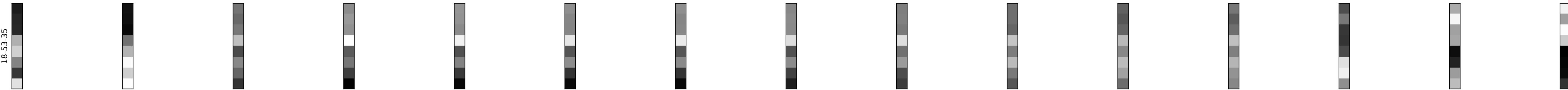
autumn - 16-40-51



autumn - 16-19-28

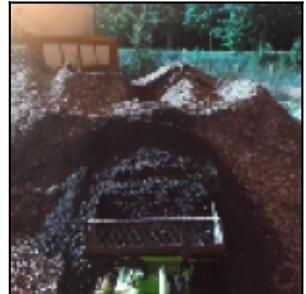
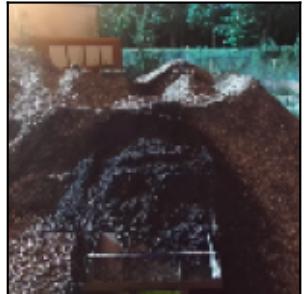


autumn - 18-53-35

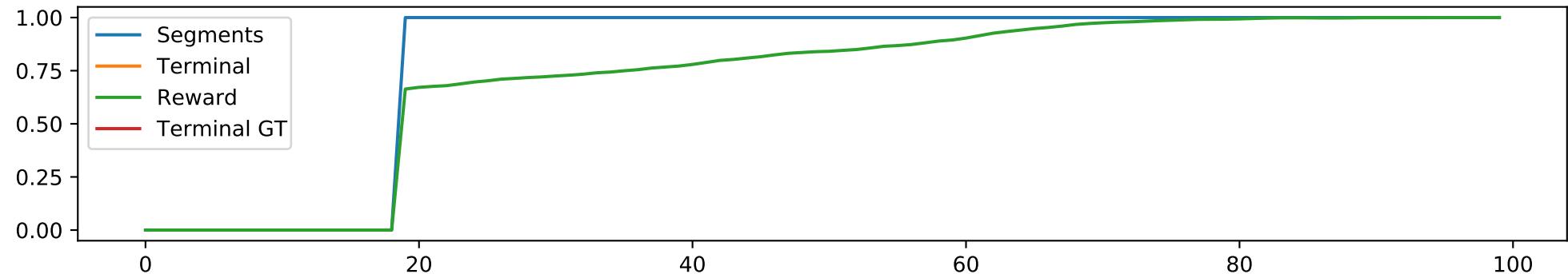
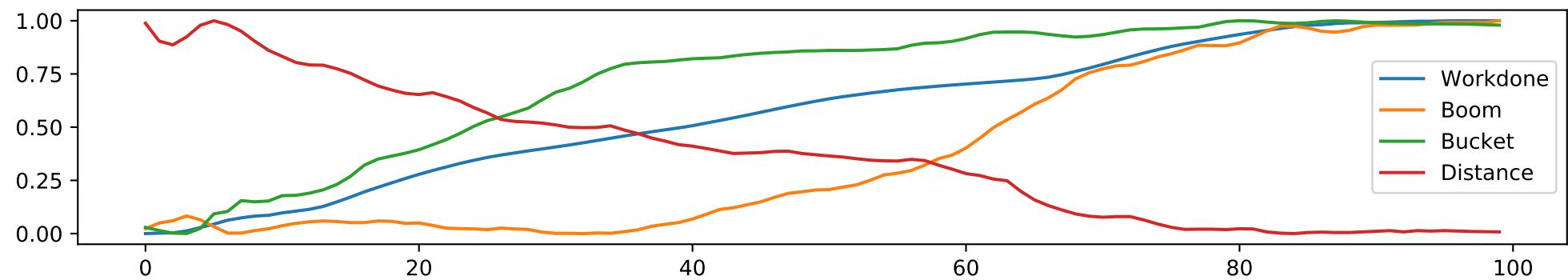
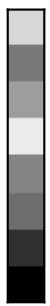
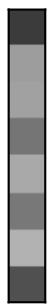


autumn - 16-18-15

16-18-15



16-18-15



autumn - 16-18-15

16-18-15



16-18-15

