A High Performing and Scalable Model for   
Computing and Visualizing Urban Transit Accessibility

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**ABSTRACT**

Problem Statement:  
Background and more problems:  
Brief hypothesis/solution statement:  
Brief methodology:  
Results:  
Future work:

**1 INTRODUCTION**

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**2 BACKGROUND**

In this section we briefly discuss .. (overview).

**2.1 Literature Review**

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**2.2 Specific Terminology Stuff**

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**2.3 Research Questions**

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**3 METHODOLOGY**

In this section, we detail how the research problem was approached computationally starting from the data to the … .

**3.1 Data**

The data.

**3.2 Creation of Multimodal Networks**

**3.3 Transit Accessibility Scoring**

**3.4 Amenity Accessibility Weights**

**3.5 Software Specification**

**3.6 Experimental Setup**

**4 EXPERIMENTS AND RESULTS**

***RQ1:*** *?*

.

Table example

|  |  |  |
| --- | --- | --- |
| Model | Precision | Recall |
| Basic LSTM1 | 0.99 | 0.99 |
| LogRobust[3] | 0.962 | 0.962 |
| DeepLog[6] | 0.95 | 0.96 |
| LogCluster[2] | 0.60 | - |

**Table 4: Model performance comparisons to related state-of-the-art log anomaly detection models.**   
1Basic LSTM corresponds to a 2 Layer bidirectional LSTM (see Table 3). 2Averaged from 5 final precision/recall scores reported from the original source [3].

Another table example.

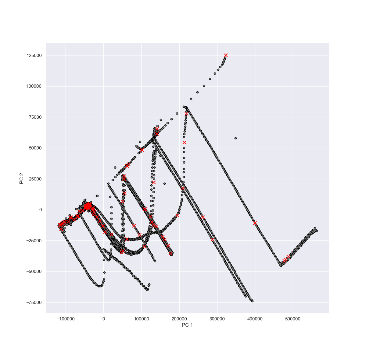
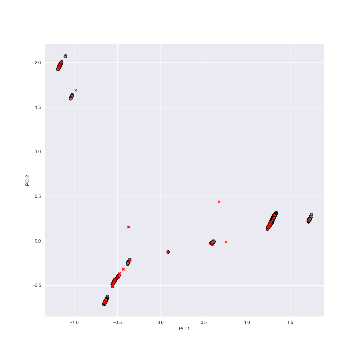
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model |  | | Precision | Recall |
| ***One Sequential Event Feature*** | | | | |
| LSTM | Bidirectional | 2 Layer | 0.99 | 0.99 |
|  | 1 Layer | 0.99 | 0.98 |
|  | Single direction | 2 Layer | 0.98 | 0.98 |
|  |  | 1 Layer | 0.98 | 0.98 |
| ***First 32 Principal Components from 128 Non-Sequential Features*** | | | | |
| Autoencoder | By event | - | 0.12 | 0.24 |
| Convolutional Autoencoder | By Window | - | 0.05 | 0.25 |

**Table 5: Comparison of model performances based on trained feature types and architectures.**

***RQ2:*** *?*

***RQ3:*** *?*

Figure example

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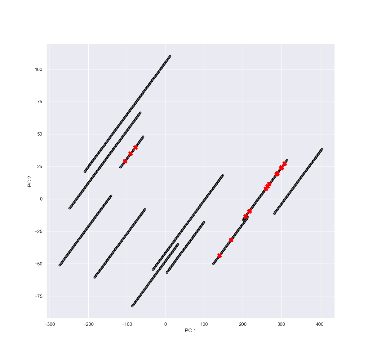
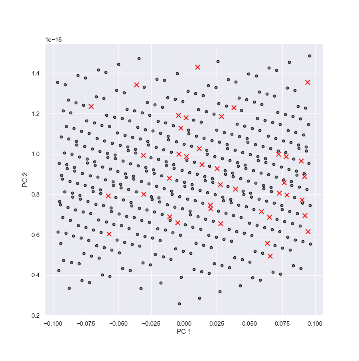
**PC2**

*Magnified*

*Magnified*

**Set B**

**Set A**

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**PC1**

**Figure 3: First two principal components (PCs) from uninformative feature engineering.** (**A**) data includes structural, time, and message keyword features while   
(**B**) data only includes structural and time features.

**5 DISCUSSION**

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**6 CONCLUSIONS**

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**ACKNOWLEDGMENT**

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