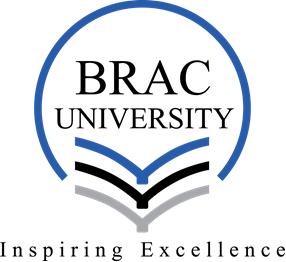
**Pre-thesis -I Report**



A Model for Anomalies Detection in Internet of Things (IoT) Using Inverse Weight Clustering and

Decision Tree

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Deep learning based predictive analytics for efficient content caching in edge network

**Abstract**

Content centric network is a state-of-the-art networking architecture for content distribution and content caching. However, it is inefficient to cache every content in each network devices. The modern edge computing technology opens the door for content caching in the edge of the network. However, still we have to decide which contents we should cache and which content we should replace from the cache. The deep learning based predictive analytics can play an important role in selecting contents for caching purpose. In this research, we will use LSTM based Recurrent Neural Network for predictive content caching at the edge of the network.

1. **Introduction**

Soon after the invention of the first computer ENIAC in 1946, one of the most significant lacking it had was networking. People could do many things with the computer. But, it was impossible to share their works with others who were miles away. From this hunger of sharing, people started to think about making a system by which they could share their works with others. From this consequence, in 1960 ARPANET (The Advanced Research Projects Agency Network) was built in order to create a network with thousands of computers. And, thus the journey of networking had started.

In the very first era of networking, it was just a connection between computers for sharing mostly research data or important files. Only some of the sophisticated researchers and high-level people got to have the benefit of networking. But, in modern time, the concept of networking has changed a lot. Nowadays, there are thousands of fields in networking. People from every stage in the society get help of networking in their day to day life. In this context, content has become the most powerful weapon in the networking field. People use contents to get their job done in their daily life. Starting from media streaming sites, social networking sites, online news portals and many others are spreading digital wellbeing to the human beings through contents.

Content centric network is getting richer day by day with the help of thousands of content providing sites and its users. However, this won’t have been this rich, if it wouldn’t have been efficient. Efficiently caching the contents are so much important in networking. Caching a content means fetching the content from the server. It might be any server all over the world. But, that might be problematic as the server from which the files are being cached, might be far away from the user. That’s where efficient content caching comes in handy. In efficient content caching, files get fetched from the closest server. As a result, lots of time gets saved.

However, there is a significant issue when deciding which content we should cache and which we should not. Deep learning based predictive analytics comes into play for taking this decision. Predictive analytics according to previous data decides which data we should cache and which we can replace from the server.