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A SECURITY TACTIC BY VIRTUALIZING EDGE COMPUTING ON IOT

SUMMARY

Related Works

This section can be divided into two parts;

- **Existing work on IoT and EC**
- **Research on network Virtualization**

Let's discuss that

Existing Work on IoT and Edge Computing

Researchers' research on edge computing extends to various fields and the major problem was blockchain which can be solved by combining Edge Computing. Different researchers presented their work and here are some of them.

- **Y. Wang, Y. Hang** discussed and introduced the relationship between mutually beneficial edge intelligence and intelligent edge.
- **Z. Xiong, D. Niyatol** respectively presented the problems faced by public blockchain networks based on different consensus protocols.
- **Y. Zhang, N. C. Luong** suggested a method to support data management of IoT by using blockchain.
- **X. Wang. Y. Han** combine EC and deep learning to make edge systems more intelligent.
- **Z. Xiong, Y. Zhang** worked on deep reinforcement learning for mobile 5G. They said that with the development of 5G network, the network becomes more and more intensive and different services are difficult to be guaranteed.
- **J. Kang, Z.Xiong** introduced a new method which can solve the complex interface and backhaul problems between densely distributed cells.
- **J. Du, C. Jiang** researched on Constant mechanism and performance analysis for data transmission in mobile social networks.
- **H. Li, M. Dong** used the Software Definition Network **(SDN)** virtualization structure to classify and virtualize the facilities in the social internet of things.

Researches on Network Virtualization

The demand for virtual network across multiple domains is growing rapidly. Let's have a look on the researches related to it.

- **P.Zhang, S.Wu** worked on topology based reliable virtual networks embedding from a qoe perspective.
- **P. Zhang H.Xao** also worked on Virtual network embedding using node multiple matrices based on simplified ELECTRE method.
- **P.Zhang** worked on security aware virtual network embedding algorithm using information entropy TOPSIS.
- To solve **security problems L.R.Bays, L.P. Gaspy** presented an idea on security aware optimal resource allocation for virtual network embedding.
- To overcome transmission and security delays, **C. Jiang** proposed cooperative strategy between nodes to reduce the average delays and bitrate of downlinks.
- **C. Huang** & **Q. Zhu** introduced the trust relationship, built a mathematical model of security virtual network mapping.
- **C. Jiang** & **X. Zhu** modeled the three-layer heterogeneous satellite network as network model which greatly reduces the space and improves the efficiency.
- **P. Limin** proposed a minimum cost embedded algorithm.