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Dear Members of the Research Committee,

I am writing to submit my research proposal entitled "**Anomalous Distributed Traffic Detection in Microservices with Clustering and Attention-based Graph Neural Networks**" at IPM. As an individual who recently obtained a PhD in Computer Engineering from Shiraz University in Iran, I am interested in continuing my research at your esteemed institution. I would be immensely grateful for the chance to contribute to the advancements being made at your organization.

My fields of interest include Cloud Computing, Edge/ Fog computing, Big Data Analysis, the Internet of Things (IoT), and distributed learning. My PhD research, developed in consultation with Prof. Farshad Khunjush, investigates the design of a deep learning-based proactive autoscaling architecture in cloud computing using container-based virtualization technologies such as Docker and Kubernetes.

My proposal addresses this challenge by combining clustering algorithms with Graph Convolution Networks (GCNs) and an attention-based mechanism. Using this approach, the proposed model can examine the interconnections between microservices and the changes in RPC traffic over time, resulting in a more comprehensive and accurate understanding of the system. The proposed model employs machine learning algorithms to learn from historical RPC traffic data and predict future traffic trends. It can detect anomalies in real time and notify the security team with all the necessary information to address the issue. Furthermore, the proposed model can evaluate enormous amounts of data and identify intricate traffic patterns that conventional security tools may be unable to detect, significantly improving the accuracy and effectiveness of the detection process while reducing the likelihood of false positive alerts.

The proposed solution has the potential to contribute to the microservices architecture and security field significantly. I am excited about the opportunity to work on this project and look forward to discussing this proposal further.

Thank you for considering my proposal.

Sincerely,

Javad Dogani