**Fog computing architecture for personalized recommendation of banking products**

Rakesh Lakhani1, Kiran Kumar2, Vijay Simha1

1 Department of Computer Science and Engineering, SRM University – AP, Amaravati, Andhra Pradesh, India

2 Department of Electrical and Electronics, Indian Institute of Technology- Madras, Chennai, Tamil Nadu, India

Email: rakesh\_lakhani@srmap.edu.in

**Abstract:**

In this article, a novel Fog Computing solution is proposed, developed in the area of fintech. It integrates predictive systems in the process of delivery of personalized customer services for the recommendation of the products of a banking entity. The motivation behind this research is to improve aspects of customer support services, especially, achieve greater security, increased transparency and agility of processes as well as reduce entity management costs. The presented architecture includes fog nodes where data are processed by light intelligent agents allowing for the implementation of contextual recommendation systems together with the configuration of a Case Based Reasoning in the Cloud layer to improve the efficiency of the whole system over the time. The recommendation system is the cornerstone of architecture operating on banking products, such as mortgages, loans, retirement plans, etc., and it is developed by a hybrid method of recommendation: collaborative filtering combined with content-based filtering. The article analyzes the presented architecture while performing a verification and simulation of the data in the context of commercial banking. For this purpose, it shows the use of the proposed system of recommendations that represent the different communication channels as well as the possible devices. The proposed architecture offers the opportunity to improve the customer service in the bank’s physical channels and at the same time generate technological support to improve the resolution capacity of office managers, allowing employees to adopt a more versatile and flexible role. It also allows the evolution of the banking services model in offices while the processes that support it to follow a one-stop shop approach.

Keywords: Fog computing; Architecture; Recommendation system; Commercial banking; Fintech