Model-Centric Federated Machine Learning

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Tranditional Federated Machine Learning follows a server-domincated training paradigm which narrows the application scenarios of federated learning and decreases the enthusiasm of data holders to participate.

CCS Concepts: • **Computer systems organization → Embedded systems**; *Redundancy*; Robotics; • **Networks** → Network reliability.

Additional Key Words and Phrases: datasets, neural networks, gaze detection, text tagging

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1 INTRODUCTION

Introduction: Federated Learning [3].

1.1 Related Surveys

In recent years, federated learning has become a buzzword in various fields, leading to the emergence of numerous FL studies. These works can be classified into two primary categories: FL system design and FL appllications. The initial architectures and concepts for FL systems were summaried by Yang *et al.* [9]. They categorize FL into horizontal FL, vertical FL and federated transfer learning based on the distribution characteristics of data, which are written in IEEE Standard 3652.1-2020 [6, 8]. Following this, an increasing number of surveys have emerged focusing on enhancing FL system design. From the algorithmic perspective, personlized FL [2, 7] aims to learn personlized models for each client to address the challenge of statistical heterogeneity. Besides, the privacy-perserving model aggregation protocols of FL systems also been widely studied and sumaried by [1, 4, 5, 10] Furthermore, Many advance FL architectures had been proposed and summaried, such as Decent Some surveys

1.2 Distinction of Our Survey

However,

Federated leanring is promising

Three cooperation frameworks: query-based FL, contract-based FL, writ-based FL

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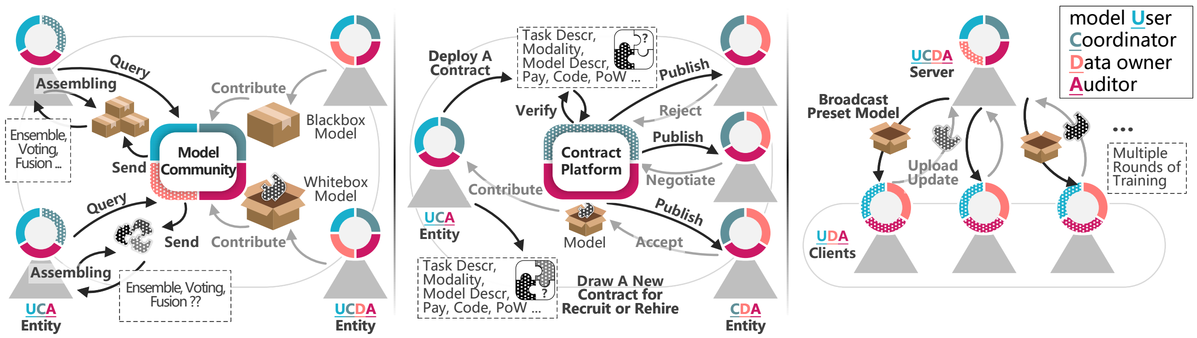

(a) Query-based FML (b) Contract-based FML (c) Traditional FML

Fig. 1. Cooperation frameworks of FML.

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