IEEE Internet of Things Journal (IoT-J) Special Issue on
AI-driven IoT Data Monetization: A Transition From "Value Islands" To "Value Ecosystems"

With the trajectory of the Internet of Things (IoT) moving at a rapid pace and with the rapid worldwide development and public embracement of wearable sensors, these days, most companies and organizations are awash in data. However, discovering how to derive a profit from the data tsunami can differentiate a business from its competitors. The potential for data to deliver value for many parts of the business is tremendous. We have already seen a layer of monetization across vertical domains by most organizations embarking on the IoT journey where connected IoT things will be stacked with various Software-as-a-Services, from smart insights to subscription models. However, we are proceeding even further and what is emerging is the evolutionary creation of the "machine data economy." Indeed, a unique source of competitive advantage and differentiation in the digital economy lies in the ability to leverage and monetize data effectively, rather than simply hoarding it. The recent advent of the technological advancements in all spheres of analytics — artificial intelligence, machine learning, big data analytics, etc. — has paved the path for a new era of competitiveness where IoT data is considered as a living and evolving asset that can unlock enormous new opportunities for monetization. This has brought forth a slew of architectures, tools, platforms, marketplaces, business models, and trading spaces designed to enable companies to monetize data. For example, recently, the digital world is witnessing the rise of new business models aiming to tip the balance of power between users and the companies that doing profit by ingesting, aggregating, analyzing, trading, and harvesting customer data. In this context, several start-ups have started empowering customers to monetize data by allowing them to sell their data directly to the end data consumers e.g., advertisers. It should be noted that there is not only one way to generate value by selling data resources, but also to apply value-adding steps to make this resource even more valuable. In general, data owners can take three main approaches to monetize their data: (1) improving internal business processes and decisions e.g., using data/information management, productizing information, and informationalizing, (2) developing new services or products or improving existing products or services, and (3) making raw data or extracted insights/analysis available to customers and partners (e.g., data marketplace). This special issue aims to address key challenges, such as the development and provision of new business models, methods, and architectures for IoT data monetization from the edge, to fog, cloud, big data analytics, and data marketplace. In particular, we encourage original and high-quality submissions related to one or more of the following topics (but not limited to):

- Multidisciplinary data monetization strategies
- Benefits and risks of data monetization adoption by organizations
- Challenges in topic discovery, data collection, and data preparation
- Modern analytics architectures for data monetization
- Blockchain and Distributed Ledger Technologies for data monetization
- International Data Space (IDS) Architecture
- Trust-oriented designs for IoT data monetization
- Emerging trends and architectures in Edge-Cloud interplay for IoT Data monetization
- Artificial intelligence for decision making in the era of Big Data
- Big data analytics and deep learning techniques e.g., predictive maintenance, fraud detection, recommendation systems, people analytics, social media research, and omnichannel customer experience
- Privacy-preserving machine learning algorithms and techniques for collaborating data monetization
- Privacy and security aspects of data monetization
- Secure embedded IoT devices in the era of IoT data monetization
- Advanced computational technologies for data monetization
- Economics of privacy and anonymity
- Cross-market value delivery
- Measurement and quantification of privacy and security risks
- Economic models of data pricing
- Privacy and anonymity models
- Valuation of personal data
- Protocols and architectures for data-price negotiation and data exchanging
- Privacy-aware data monetization mechanisms
- Privacy monitoring and auditing
- Behavioral advertising
- Impact on society and economy
- Incentives for data disclosure
- Primary challenges e.g., business focus, ownership, accountability, cultural, regulatory, and reputational barriers
- Real-world experiences and use cases

IMPORTANT DATES

Submissions Deadline: June 15, 2020
Revision Due: October 15, 2020
Final Manuscript Due: November 30, 2020

First Reviews Due: August 30, 2020
Second Reviews Due: November 15, 2020
Publication Date: 2021

SUBMISSION

All original manuscripts or revisions to the IEEE IoT Journal must be submitted electronically through IEEE Manuscript Central, http://mc.manuscriptcentral.com/iot. Solicited original submissions must not be currently under consideration for publication in other venues. Author guidelines and submission information can be found at http://ieee-iotj.org/. For additional information please contact the Guest Editors by sending an email to <farshad.firouzi@duke.edu>

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