

Nomination of the University of Missouri–St. Louis for "Established Company Inventor of the Year"

Dr. Jianli Pan and his graduate student and co-inventor, **Jianyu Wang**, have received the **2020 Inventor of the Year** recognition awarded by the Patent, Trademark and Copyright

The technology developed by Dr. Pan's team provides better security for IoT devices by leveraging block-chain and smart contracts. The nomination submitted by the Thompson Coburn attorneys who have worked with UMSL to protect this technology via a now-allowed patent application is below. The University is currently discussing commercializing this technology with interested industry partners.

The internet is evolving into an Internet of Things (“IoT”) with billions of interconnected devices. This scalability causes significant security challenges. Many weak IoT devices are made with limited security capabilities and poor or no technical maintenance options. These vulnerabilities could make the interconnected IoT devices easily controlled and turned into malicious nodes by hackers forming a botnet and initiating large scale Distributed Denial-of-Service (DDoS) attacks. Edge server computing is an emerging solution for the IoT scalability issue, but security remains a concern. Dr. Pan and his team developed a new way of resource management in an edge server environment called “Edge Chain”. “Edge Chain” is an Edge-IoT server framework that utilizes blockchain and smart contracts to distribute server resources to the connected devices. The blockchain automatically records all the activities and transactions of the connected devices so that potential malicious and suspicious behavior can be captured and recorded. If the parameters of the smart contracts are not met by the connected device, the network may prevent or limit network access thus stopping/limiting the malicious activity. Dr. Pan’s advancements are user friendly and can secure/monitor every type of network from local home networks to the network computing requirements of large companies. With Dr. Pan’s advancements, it is significantly more difficult for bad actors to gain control of compromised networks for their own nefarious agendas.

They will be recognized in the January 2021 edition of St. Louis Lawyer magazine and at the 2021 award ceremony, which will be held late summer/early fall next year.