Title: **Developing an Internet and Blockchain Emulator for Research and Education**

To provide hands-on learning experience for cybersecurity education, we have developed 40 open-source labs (called SEED labs) during the last 20 years. These labs can be carried out inside a single virtual machine or on the cloud. Over 1100 institutes in more than 80 countries are using them. To enable the lab activities that involve many computers, we have also developed an open-source Internet Emulator (called SEED Emulator), which allows us to create a miniature Internet that can run inside a single personal machine. Even though it is small, it has all the essential elements of the real Internet. Many interesting network technologies can be deployed on the emulator. We have used this emulator to create a DNS infrastructure, a Botnet, a Darknet, an Internet worm, and BGP prefix hijacking attacks. We have also deployed the Ethereum blockchain on the emulator, creating a Blockchain emulator with tens or even hundreds of nodes, all inside a single computer. Although the emulator was initially developed for educational uses, it is also being used for research.

Here is my updated bio (I was recently elevated to ACM Fellow).

Dr. Wenliang (Kevin) Du, ACM Fellow and IEEE Fellow, is the Laura J. and L. Douglas Meredith Professor at Syracuse University. His current research interest focuses on Internet/blockchain emulation and cybersecurity education. He received his bachelor's degree from the University of Science and Technology of China in 1993 and Ph.D. degree from Purdue University in 2001. He founded the SEED-Labs open-source project in 2002. The cybersecurity lab exercises developed from this project are now being used by 1,100 institutes worldwide. His self-published book, "Computer & Internet Security: A Hands-on Approach", has been adopted as textbook by 280 institutes. He is the recipient of the 2017 Academic Leadership award from the 21st Colloquium for Information System Security Education. His research has been sponsored by multiple grants from the National Science Foundation and Google. He is a recipient of the 2021 ACSAC Test-of-Time Award and the 2013 ACM CCS Test-of-Time Award.