Future Directions and Challenges of Software Understanding and Visualization

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Abstract

In software development, the shortening of development time and the increase in the scale of development have been seen as problems to date. On the other hand, the idea of open source has spread, and a growing number of open-source software, and some mechanisms have been implemented to share the source code of such software. However, it is still difficult to find what you are looking for from a large amount of publicly available source code, understand the source code, and incorporate it into your own software.

Program diagrams are common in understanding source code, and Flowchart and UML are often used in current development. With the recent development of artificial intelligence technology, it is expected that artificial intelligence will be applied to software understanding and source code understanding to support developers with higher accuracy.

In this talk, I will present challenges and future software understanding and visualization trends, including the point of view on artificial intelligence and big data.

Biography

Dr. Takaaki Goto has been an Associate Professor of the Faculty of Information Sciences and Arts at Toyo University, Japan since 2019. He received a doctorate in engineering from Toyo University, Japan in 2009. From 2009 to 2015, he was a project assistant professor at the University of Electro-Communications in Japan. In 2015, he joined Ryutsu Keizai University, where he was an instructor until 2016 and an associate professor from 2016 to 2019.

His research interests include software engineering, AI, IoT, visualization, graph grammar, and software development education.

So far, he has chaired many conferences held by the International Society for Computers and Their Applications (ISCA) and the International Association for Computer and Information Science (ACIS) for several years as conference chairs and program chairs. He also served as the special session chair of ACIS, ISCA, and IEEE conferences. He is a member of IEEE, ACM, ACIS, ISCA, IEICE, IPSJ, and JSAI.