POLISH NATIONAL AGENCY FOR ACADEMIC EXCHANGE

STER PROGRAMME

name of the unit:

SOFTWARE ENGINEERING AND IT SECURITY TEAM

Institute of Information Technology, Lodz University of Technology

symbol:

I-72

http://www.it.p.lodz.pl

head of the unit:	potential promoters:	contact person:
Aneta Poniszewska-Marańda, PhD, Eng, DSc, TUL Prof	Aneta Poniszewska-Marańda, PhD, Eng, DSc, TUL Prof	Aneta Poniszewska-Marańda, PhD, Eng, DSc, TUL Prof. aneta.poniszewskamaranda@p.lodz.pl

scope of activities:

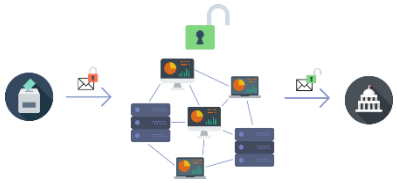
The scope of research is the development of methods and tools for the creation of intelligent IT solutions, applicable in everyday life, supported by the concepts of a smart city, intelligent society and Internet of Things, using advanced software engineering. By combining the achievements of modern software engineering and artificial intelligence, we can achieve higher quality, performance and usefulness of created information systems in practical applications, while providing security and protection of data stored and transmitted within local and distributed information systems, Internet and mobile applications and data processed in the cloud and Internet of Things systems. The detailed tasks include the development of methods in: software engineering, optimization, metaheuristics, security of data and systems, analysis, processing and extraction of information, the application of machine learning methods, artificial intelligence in planning supplies.

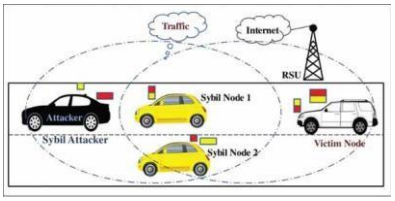
present activities:

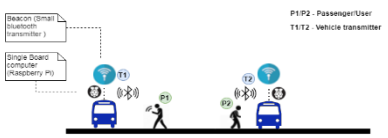
Scientific research conducted in the team includes the following issues:

- Methodologies of software development, with particular emphasis on the analysis and design of information systems.
- Research and quality analysis in the process of software development.
- Application of metaheuristics to solve the problem of supply planning.
- Ensuring the security and protection of data within local and distributed systems, internet and mobile applications as well as data processed in cloud and IoT systems.
- Natural language text processing and extraction of information and associated intelligent management of data, resource and information.
- Construction of models and algorithms for efficient intelligent systems and knowledge base systems with the use of selected machine learning algorithms.
- Research on the use of blockchain in administration, management and e-elections.
- Application of blockchain to solve important social and public problems, including ensuring the integrity of data transmission through the network.
- Security methods in VANET vehicle networks (Vehicular Ad-Hoc Network) with the use of Internet of Things concept.
- Intelligent system of automation and analysis of security procedures.

graphic material







Future activities: Conducting development works in connection with the economy, transport, public administration and health protection through the development of methods and tools for creating intelligent IT solutions that are applicable in everyday life, supported by the concepts of a smart city, intelligent society and IoT. Application areas: economy, transport, public administration, health protection, medicine.
Keywords: Software Engineering, Security, Blockchain, IoT, Machine Learning, Data Analytics, Industry 4.0
List of internship proposal in this research team: Development of algorithms and tools in the area of research
List of attachments: publons.com/researcher/1487582/aneta-poniszewska-maranda/ scopus.com/authid/detail.uri?authorId=8717200400 orcid.org/0000-0001-7596-0813