



戸川 望

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Top -level research and data

1. Quantum computing
2. IoT (Internet-of-Things) security
3. Geographical information system and intelligent transport system

(Major achievements)

- Node-wise Hardware Trojan Detection Based on Graph Learning, Kento Hasegawa, Kazuki Yamashita, Seira Hidano, Kazuhide Fukushima, Kazuo Hashimoto, and Nozomu Togawa, IEEE Transactions on Computers, 2023.
- Spin-Variable Reduction Method for Handling Linear Equality Constraints in Ising Machines, Tatsuhiko Shirai and Nozomu Togawa, IEEE Transactions on Computers, 2023.

Deployment targets (sites, materials, etc.)

1. Quantum computer and its applications
2. IoT systems and supply chain
3. GIS/ITS services

Start-up company co-founded by Prof. Togawa (<https://quanmatic.com/>)

Features (implementation means, etc.)

Major national R&D projects led by Prof. Togawa to realize Society 5.0.

1. Quantum computing

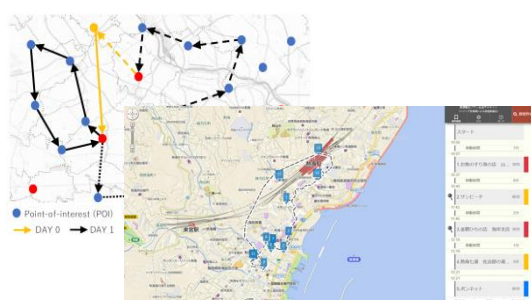
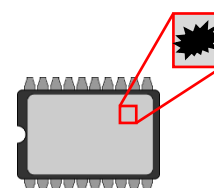
- NEDO: Development Of Next-generation Computing Technology / Research and Development of Common Software Infrastructure for Ising Machines
- SIP: Photonics and Quantum Technology for Society 5.0 / Next-Generation Accelerator Platform

2. IoT security

- NICT Beyond 5G R&D Promotion Project
- MIC Strategic Information and Communications R&D Promotion Programme (SCOPE)

3. GIS and ITS

- JST CREST Technology for Computing Revolution for Society 5.0

Application for Qunatum Computing 1
Trip PlanningApplication for Qunatum Computing 2
Personnel Shift OptimizationIoT Security
Hardware Trojans Detection
in IC chip

Associated proprietary technologies

- Application and software technologies for quantum computing
- Hardware Trojans detection in IC design and manufacturing
- Navigation algorithms for GIS

Expected outcome/ applications

- Solution development using quantum computing
- Secure network and service system
- Secure supply chain development

Associated SDGs

