School of Information Science at Japan Advanced Institute of Science and Technology (JAIST)

We are currently welcoming international students for internship opportunities at JAIST. The number of available positions varies depending on the supervisor. For detailed information and specific requirements, please reach out directly to the relevant supervisor.

List of supervisors

1. **Natthawut Kertkeidkachorn (natt@jaist.ac.jp)**
   1) Large Language Models: We are conducting research to understand and improve the capabilities of large language models, aiming to apply them in real-world applications such as the legal, healthcare, and customer service sectors.
   2) Financial Natural Language Processing (NLP): We are presently engaged in various financial NLP projects. The objective of this theme is to develop practical NLP applications in financial sectors. Examples include Stock Trading using News Sentiment, Portfolio Management, and Question Answering with the aid of Financial Knowledge Graphs.

2. **Kazuhiro Ogata (ogata@jaist.ac.jp)**
   Formal specification and verification of systems:Among systems are concurrent systems, such as a shared-memory mutual exclusion protocol, distributed systems, such as a distributed snapshot protocol, security pro tools, such as TLS, post-quantum security protocols, such as post-quantum hybrid TLS, and quantum circuits, such as quantum teleportation protocol. Systems under specification and verification are not limited to the above-mentioned. CafeOBJ and Maude, algebraic specification languages/systems, aremainly used.

3. **Yasuo Tan (ytan@jaist.ac.jp)**
   Research on smart home services and service platforms: Research on various smart home services such as energy management, security, audiovisual, and health care, and service platforms to realize these services. Experimental houses that can be used for actual living are also available.

4. **Yuto Lim (ylim@jaist.ac.jp)**
   Quantum Communications and Networks: A study of quantum teleportation as a promising way to send a reliable transfer of qubits between two distant nodes regardless of the nature of the highly lossy network connections.
   Optical Wireless Communication: The transmitted data is directly modulated onto the intensity of the light and transmitted through a wireless channel, which this trending technology is known as optical wireless communication or visible light communication.

5. **Ryo Maezono (rmaezono@jaist.ac.jp)**
   Based In our educational experience for non-special students, we provide an introduction to the practical simulation exercises. Take a look at my published textbook on Amazon: https://amzn.asia/d/9DDyytp

6. ~~**Razvan Beuran (razvan@jaist.ac.jp)**~~ FULL
   ~~Study on applications of AI/ML to cybersecurity:A survey will be conducted on the possible applications of AI/ML techniques to the cybersecurity domain. The design and~~

~~implementation of solutions for specific cybersecurity issues are also within the scope of this topic.~~

7. **Gregory Schwartzman (greg@jaist.ac.jp)**
   Mini-Batch K-Means Clustering: Students will delve into the world of machine learning by exploring the Mini-Batch K-Means clustering algorithm. This project involves implementing variants of the algorithm and analyzing the speed and the quality of the solution.
   Submodular Function Optimization: Submodular functions are prevalent in various domains like machine learning, computer vision, and network design. Students will begin by understanding the basics of submodular functions and then implement algorithms to optimize a submodular function.

8. **Sakriani Sakti (ssakti@jaist.ac.jp)**
   Speech recognition and synthesis: Research and develop technologies that can listen and speak by way of automatic speech recognition (ASR) and text-to-speech synthesis (TTS). Possible research topics include multilingual/code-switching ASR & TTS, and incremental ASR & TTS.
   Machine speech chain: The research focuses on integrating human speech perception & production behaviors, not only to provide technology that can listen and speak but also, to listen while speaking. Possible research topics include multilingual/multimodal speech chains, incremental speech chains, and speech entrainment.
   Zero-resourced Speech Technology: The research focuses on developing technologies that can learn a language like a toddler and gradually construct knowledge. Possible research topics include zero-resource speech processing, unsupervised/semi-supervised deep learning, knowledge representation & modeling.
   Speech Translation: The research focuses on human-like simultaneous speech interpretation that does not translate into text but directly from speech to speech, covering both linguistic and paralinguistic information. Possible research topics include direct speech translation, paralinguistic representation & translation.

9. ~~**Toshiaki Aoki (toshiaki@jaist.ac.jp)**~~
   ~~Verification of an automated driving system platform. We are proposing formal methods to ensure the safety and reliability of automated driving system platforms. The formal methods consist of a formal specification language, a control specification language, and formal verification methods using these languages. In the internship, you are supposed to join our project and conduct some experiments using an automated driving system platform.~~

10. **Ho Anh-Van (van-ho@jaist.ac.jp)**
    1) Soft robotics technology facilitating smart agriculture and Quality of Life
    2) Tactile/Proximity sensing for safety control of collaborative robots
    3) Event-based camera sensing for fast-tracking of objects
    4) Bio-inspired swarm technology for navigation in narrow space.

11. **Kiyoaki Shirai (kshirai@jaist.ac.jp)**
    A study of natural language processing We develop a program to solve a task of natural language processing (NLP), such as paraphrase identification (to judge whether two sentences have the same meaning), textual entailment (to judge whether a sentence implies another sentence), natural language inference (to judge a semantic relation between two sentences), and so on. We apply machine learning, that is, we train a classifier or model to solve an NLP task from a corpus (a collection of texts).