Name	Supervisor	Title	Abstract
Kajiba Shunsuke	Segawa Etsuo	Weak and strong convergence theorems for common fixed points of two nonlinear mappings	In the fixed point theory, approximation method of a fixed point of a nonlinear mapping is one of the most important topics. So, many researcher have been studying various iteration schemes for finding a solution to the fixed point problem for nonexpansive mappings. As well-known methods are iteration method which were introduced by Halpern, Mann and Baillon. On the other hand, in 2011, Takahashi and Takeuchi proposed the notion of an attractive point. An attractive point is an important notion related to fixed points. Motivated by the works as above, in this thesis, we study convergence theorems for common fixed points of two ponlinear mappings
Shimizu Shoma	Shirakawa Shinichi	A Study on Reinforcement Learning Algorithms for Automatic Berthing without Reference Trajectories	Autonomous ships are attracting attention to prevent maritime accidents and improve sailors' working environments. This study applies reinforcement learning to automatic berthing, an essential technology for realizing autonomous ships, and obtains online control laws without reference trajectories under spatial constraints. In the experiments on a simulator, the control law with high performance, even under wind disturbances, was obtained by combining supervised learning and reinforcement learning. Also, we developed a novel robust reinforcement learning algorithm and confirmed the improvement in success rate when the control law is trained using reinforcement learning alone.

List of Dissertation Abstract (Department of Information Environment)

Name	Supervisor	Title	Abstract
Natsumeda	Matsui	V&V in Thermal-Structural Coupling	This study proposed new metrics for credibility assessment in
Chikako	Kazumi	Simulation with Sintering Phenomena	simulation models with reference to the concept of "model
		of Ceramics	credibility" presented in ASME V&V-40, a standard on quality
			assurance for engineering simulations. Focusing on the
			uncertainties of model forms, we showed (1) a credibility factor
			for material model calibration, "calibrated material model" and
			(2) a credibility grade based on the accountability of the model
			responses. These credibility assessments were practiced in
			sintering simulation model for ceramics the author developed
			and thermal-structural coupling problems.
Hayashi Shungo	Yoshioka	A Study on Laser Fault Injection	Recently, it has become important to ensure the security of
	Katsunari	Attacks and Countermeasures in	embedded devices as society moves toward the IoT. Since
		Embedded Devices	these embedded devices are physically accessible to attackers,
			it is necessary to implement cryptography and other systems
			based on the assumption of implementation attacks from
			physical routes. In this study, we evaluated the security of
			various embedded devices against laser fault injection attacks
			on various ICs mounted on the embedded devices, and
			developed a technique to improve the resistance to the attacks.

List of Dissertation Abstract (Department of Information Environment)

Name	Supervisor	Title	Abstract
Gan Chengguang	Mori	A Study of Prompt in Information	Prompt plays a crucial role in enhancing interactions between
	Tatsunori	Extraction with Language Models	humans and language models. This study explores prompt
			optimization for information extraction (IE) tasks across the
			PLM and LLM eras. First, we introduce the Mutual
			Reinforcement Effect (MRE) to improve both word- and text-
			level tasks. Second, we apply prompts to resume screening,
			developing an LLM agent for automated evaluation. Third, we
			analyze prompt sensitivity in LLMs, revealing performance
			shifts due to wording variations. Our findings highlight
			effective prompt strategies, advancing LLM applications in IE.
			This research enhances understanding of prompt dynamics,
			optimizing language model performance in IE.

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