

Division of Electrical Engineering and Computer Science	Research field	Computer Science	Lab. ID EC22
Laboratory web site	http://csl.ec.t.kanazawa-u.ac.jp/		
Research subjects			
<p>Both the cloud computing of Google and Microsoft and the embedded software such as home information appliances and automobiles are social infrastructures. We study software technologies about cloud computings and embedded software. Typical research subjects are as follows: (1)Software model checking for verifying embedded systems, (2)Analysis and design of cloud computing based on aspect-oriented and objec-toriented software, (3)Artificial intelligence such as deep learning implemented on cloud computing, (4)Foundation of computer software such as programming language, operating systems, distributed systems.</p>			
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory			
<p>Master course: The first grade students take seminars such as cloud computing, deep learning and model checking. At the beginning of the second grade, the students decide their practical subject for the Master thesis and look for a job. Also master course students will present their study in domestic and international conferences. Doctor students are encouraged to go for outer activities, participating research workshops/meetings, international conferences.</p>			
Daily life in the laboratory, etc.			
<p>Personal working desk with a personal computer is available for every student. Also the PC cluster machine can be used for cloud computing. All relevant students of undergraduate, Master, Doctor researchers share the laboratory rooms, and everyday free discussion on computer software such as mathematical logic and programming language are strongly encouraged. Many laboratory activities are organized like, welcome party for new comers, excursion, summer workshop, etc.</p>			
Message or comments by the laboratory faculty staffs			
<p>We think students should study software technology revolutionizing the world for school days. Our laboratoy gives an opportunity to study advanced software technologies such as cloud computing and embedded software. The student thinks by oneself and should learn.</p>			
Recent Master theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
2017.3	Parallel symbolic execution by compressing states using control flow graph		
2017.3	Studies on Data-Driven Control of Nonlinear and/or Time-Variant Mechanical Systems		
2017.3	Compression and reconstruction of method call context for program execution histories		
2017.3	A generation model of sentence representation by convolutional neural network for English-Japanese machine translation		
2017.3	Automation of the load distribution of actors using sharing states		
2017.3	Model checking of embedded assembly program using CEGAR		
2016.3	Implementation of Parallel Distributed Graph Clustering Algorithm on Apache Spark with Node Partition and Aggregation in Large-Scale Graphs		
2016.3	Integration of Supervised and Unsupervised Learning for Deep Neural Network		
2016.3	Model checking of embedded assembly program by simulation using undefined values		
2016.3	Unigrams weighting methods in sentiment analysis for short text messages		
2015.3	Software model checking of embedded assembly codes based on symbolic execution		
2015.3	SMT-based model cheking of embedded assembly codes by Interrupt transition reduction		
2015.3	CEGAR-based model cheking of linear hybrid automata		
2015.3	Trace reconstruction technique of Hadoop YARN using profiling and program analysis		
2015.3	Scalable distributed online machine learning by decision trees based on actor model		
2014.3	Hanoi:performance analysis of Hadoop using trace logs of plural layers		
2014.3	SMT-based bounded model cheking of embedded assembly codes		
2014.3	Specification and model checking of embedded CISC assembly codes using temporal logic		
2014.3	Symbolic model checking of embedded CISC assembly codes using NuSMV		
2013.9	Theory and implementation of DLHA and dynamic hybrid CEGAR		
2013.3	Detection of bugs in mobile applications by static program analysis using runtime logs		
2013.3	Implementation of Probabilistic timed CEGAR verifier using Java		
2013.3	Dynamic hybrid CEGAR verifier		

2013.3	Theory of Probabilistic timed CEGAR verifier
2013.3	Specification and verification of Dynamic reconfigurable system
2012.9	Specification and Verification of CPU-DRP cooperating system properties using monitor automata by HyTech
Recent Doctoral theses in these 3 years (+ more if appropriate)	
year.month	Thesis title (including English translation of Japanese thesis title)
2017.3	Dynamic Linear Hybrid Automata and Their Applications to Formal Verification of Dynamic Reconfigurable Embedded Systems
2016.3	Method of Inferring Source Code Locations Corresponding to Mobile Applications Run-time Logs
Laboratory mail address	Satoshi Yamane <syamane *at* kanazawa-u.ac.jp>