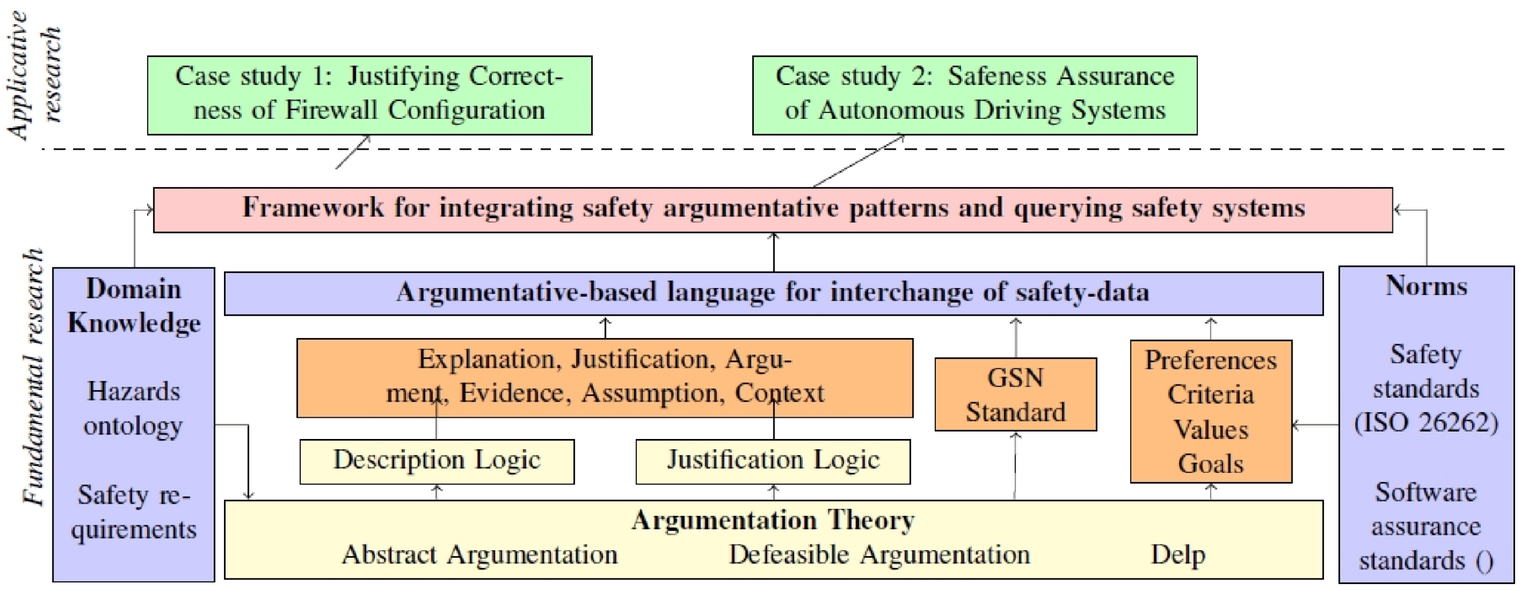
ARGSAFE: Using Argumentation for Justifying Safeness of Complex Technical Systems

Romania - Argentina Bilateral Agreement
11 September 2013 - 11 September 2015

Investigation domain



Objectives

Date	Objectives	Novelty	Associated Tasks
Jun 2013	O1. Analysis the problem of justifying safeness of complex technical systems.	Identifying the possibilities of integrating argumentation theory, quality standards and ontologies.	Formal analysis of quality standards. Identifying factors affecting confidence in safeness of software systems.
Sep 2013	O2. Developing the assurance model based on argumentation theory.	Justificative reasoning in the context of heterogeneous and contradictory evidence	Developing the defeasible justification logic. Contextualising evidence.
May 2014	O3. Developing the system of justifying safeness of complex technical system.	Automatic identification of inconsistent justifications.	Developing a generic ontology for hazards. Organising the first ARGSAFE workshop.
Sep 2014	O4. Applying the system for safeness assurance of autonomous driving systems.	Organising evidence, building arguments and counter-arguments.	Formalising safeness requirements. Formalising assumptions regarding operating mode and specific hazards.
Dec 2014	O5 Applying the system for verifying correctness of firewall configuration	Presenting arguments for decision support under temporal constraints	Identifying inconsistency in security rule-based systems. Organising the second ARGSAFE workshop.
Mar 2015	O6. Developing a methodology of exploiting structured arguments in safeness assurance	Re-using safety cases. Re-engineering complex software systems based on arguments.	Defining patterns of safety cases. Stating the principle of building arguments when developing complex software systems.

Team: Technical University of Cluj-Napoca (TUCN)

Adrian Groza received his Phd in 2008 from Technical University of Cluj-Napoca, Romania. He is currently a lecturer at Computer Science Department at TUCN Cluj-Napoca. He is member in Open Agent Based Modeling Consortium (din 2013), Int. Assoc. for Artificial Intelligence and Law (din 2012), Computer Science Teacher Assoc@ACM (din 2011), Special Interest Group on Human Computer Interaction ROCHI@ACM (din 2004). His research interests are multi-agent systems, normative reasoning and knowledge representation.

Ioan Alfred Leţia full professor in the Department of Computer Science of the Technical University of Cluj-Napoca and head of the Intelligent Systems Group. He is a correspondent member of the Academy for Technical Sciences in Romania since 1999. He received his Ph.D. in 1975 from the City University, London, UK. He served on several program committees of international conferences and has been a reviewer for some international journals. He is the program chair of the annual IEEE International Conference on Intelligent Computer Communication and Processing held in Cluj-Napoca since 2006. His current research interests include flexible multi-agent communication, and checking the normative processes.

Anca Goron is a Phd. student at Technical Universitty of Cluj-Napoca, Department of Computer Science and member of the Intelligent Systems Group. Her current research interests regard model checking and hybrid logics.

Universidad Nacional del Sur

Sergiu Alejandro Gomez is Adjoint Professor (Dept. of Computer Science and Engineering, Universidad Nacional del Sur, Argentina) where he teaches Computer Programming and Data Structures and Part-time Associate Professor (Facultad Regional Bahia Blanca, Universidad Tecnologica Nacional) where he teaches Fundamentals of Informatics. His education includes a PhD in Computer Science from Universidad Nacional del Sur, Argentina, 2009. For his graduate studies he was awarded with the Joaquin V. Gonzalez distinction to best students. He performs his research at the Artificial Intelligence Research Lab LIDIA (Lab director: Dr. Guillermo Simari). His research interests include defeasible argumentation, semantic Web, ontologies, knowledge representation.

Carlos Ivan Chesnevar is Independent Researcher from the National Council of Scientific and Technical Research (CONICET) of Argentina since 2004 and Associate Professor at the Department of Computer Science and Engineering of the Universidad Nacional del Sur (Baha Blanca, Argentina). He is currently member of the Assessment Committe of the Argentinean government for appointing researchers in Computer Science within the national research system (CONICET). He has been also representing Argentina as a non-European expert in argumentation within an ESF-funded COST action on Agreement Technologies . He has carried out research stances in different universities (Imperial College, London, UK ; University Leipzig, Leipzig, Germany; Washington University, USA, etc.).

Contact

Page: http://cs-gw.utcluj.ro/ adrian/projects/argsafe/asdec.html
Adrian.Groza@cs.utcluj.ro
sag@cs.uns.edu.ar