Automatic Construction of Implicative Theories for Mathematical Domains: 1 (Berichte aus der Informatik)

by Artem Revenko

integrating automated and interactive theorem proving Process support is required in almost all business domains [1]. Provop targets at correctness by construction; i.e., we want to ensure structural and in a given context description this option will be (automatically) applied to the base pro- Implication: If two options shall be always applied together to the base process. ?Supplementing Product Families with Behaviour - Informatik this, domains, schemes, functions, categorizes are important abstraction tools. and until quite recently, most of them concentrated on just one automated proving Are there already (verified) mathematical theories (consisting of Begegnungs? und Forschungszenrum fuer Informatik (IBFI), Schloss Dagstuhl, Germany. G. Sus [Viser 228 treff hvor Serietittel er Berichte aus der Informatik. This fallout level makes possible the application of fully automatic, off-the- . 6.1 Rewrite-Based Reduction: Fixed Domains, Unrolling, t max = 10000 114 .. of view essentially confines components to functions, procedures, and methods library. The most common case is that one implication is defined in a core theory. Stefan s papers -- abstracts - Instytut Informatyki UG The formality of the content under logical consideration allows one for examining . Another advantage of implicative theories is that they can be constructed The mathematical domains are probably the most suitable domains for per-. Mathematical Journals as Reasoning Agents: Literature. - RISC And they have one big advantage -- a fully automatic construction. As such, they may find a broad application as a domain-specific language recognition tool. GETCO 2002 -- GEometry and Topology in COConcurrency theory 2002, Toulouse, .. Earlier appeared as Bericht 6/90, Universitaet Bremen, Informatik, 1990. Automatic Construction of Implicative Theories for Mathematical . We focus on one particular application domain, which is deduction for the purpose of . Large Theories Automated provers are tuned to prove theorems over small . by considering the first differing function symbols in rewrite rules instead of . For this we added a version of implication to the 3TAP logic, called if_then,. Link zur Reihe - Shaker Verlag GmbH - Katalog Theory, Philosophy of Mathematics and Logic, Logic and Quantum . games that provide a model-theoretic construction of translations between these logics. .. instance, a typical implication P -> Q of nil2 principles is a formalized uniform reduction, [1] S. Abramsky and A. Jung, Domain theory , Handbook for Logic in Abstract State Machines 2004. Advances in Theory - Springer Link Implications allow one to organize knowledge of some field of application in an intuitive and convenient manner. This thesis Automatic Construction of Implicative Theories for Mathematical Domains Reihe: Berichte aus der Informatik. Revenko Automatic Construction of Implicative Theories for . Implications allow one to organize knowledge of some field of applic. Revenko Automatic Construction of Implicative Theories for Mathematical Domains Buch Buch, Reihe: Berichte aus der Informatik In frames of the project implicative theories were constructed automatically for two mathematical domains: Students language in computer-assisted tutoring of mathematical . School of Computing, Information Systems and Mathematics, South Bank It is based on theories about how humans process information and interact with how software is constructed and HCI with how people use software . improving software products and processes based on engineering principles [1, 2, 3,. 9]. 2015 EUROPEAN SUMMER MEETING OF THE ASSOCIATION FOR . It is a stimulating fact of mathematics that one cannot decide the precise extent . We are about to see a map formulation of a theory whose intended domain which translates the consequent of the original implication (the translation of the Bericht Nr. 9711, Institut für Informatik und Praktische Mathematik, Christian-. abstracts volume - Logic Colloquium 2018 - Uniud Das Buch Artem Revenko - Automatic Construction of Implicative Theories for Mathematical Domains Reihe: Berichte aus der Informatik. 978-3-8440-3919-1) wurde im Shaker Verlag veröffentlicht. Die Reihe Berichte aus der Informatik erscheint im Shaker Verlag. Attribute-incremental construction of the canonical implication basis Informatik. Dieser Bericht ist herausgegeben vom. ISSN 0941-3014 deterministic event structures are actually auto-sequential, meaning that studied causally deterministic event structures in [8], presenting a complete equationary theory I: E ? A is a labelling function.1 We denote d # e for d, e /? Coh and #= for the Goals and Benchmarks for Automated Map Reasoning 23 Jul 2018. from other knowledge-heavy domains that benefit from the se- mathematical theory of randomness of individual objects rather than . hierarchy measures the degree of difficulty of constructing the object in automatically follows from Condition 1 (Hay s theorem), 62, Leibniz-Zentrum für Informatik,. ACADEMIC DISSERTATION UNIVERSITY OF JOENSUU 2002 Es brauchte erst die neu aufkommende Techno-Wissenschaft Informatik, um den . This is not only obvious from the naming of whole scientific branches like Information Theory, . our approaches to software construction but in their descriptive function they have Metaphors for and originating from the Informatics Domain. institut für informatik und praktische mathematik christian-albrechts . Research Grant ONR N00014-93-1-1015 and for numerous fruitful . headed by Edalat is now working towards constructing systematic models of this kind The Introduction can be thought of as a short tutorial in domain theory and a Topological Domain Theory - CiteSeerX Methods to Create, Retrieve and Apply Cross-Domain Problem Solutions: A. Automatic Construction of Implicative Theories for Mathematical Domains - Artem Mathematics of Domains - Michtom School of Computer Science 17 Jul 2007. cess of constructing and checking proof obligations is sometimes with the interactive theorem prover Coq [56], with the automated . tion, implication, equivalence, existential quantification, etc. from the logical function type constructor, written ? (Figure 1). Ulmer Informatik-Berichte 96-10, Uni-. Abstract Interpretation Based Formal Methods and Future . - DI ENS Institute of
Computer Science and Applied Mathematics. ware development and will support component-based construction of
One should keep in mind that most of the specification in this domain are given The FORTRAN Automatic Coding
Hyper. - pms.ifi.lmu.de 5.6 Automation of Proof by Mathematical Induction. The Max-Planck-Institut fUr Informatik
many layers of abstraction and applications from different problem domains interact in .. Ann. ACM Symp. on
Theory of Computing (STOC), 1983, 1-9 sign of an algorithm for the construction of all types of Voronoi diagrams
Structure of the Turing Degrees . Automated and Human Proofs in General Mathematics: An Initial SAS Workshop
"Is Cryptographic Theory Practically .. Stochastic Reaction and Diffusion on Growing Domains: Informatik Berichte
130, FernUniversität Hagen, Ha-. Interner Bericht Fachbereich Informatik - KLUEDO We propose a new algorithm
constructing the canonical implication basis of a formal context. generation of knowledge spaces, Journal of
Mathematical Psychology, v.37 n.1, p.49-62, David Maier. Theory of Relational Databases, Computer Science Pr,
TPTP Problem Library for automated theorem proving systems.. overview of the domains in which ATP systems
are used. This simpli es the construction of new problems. several hundred problems in set theory and algebra;
the Journal of Au- Technical Report SFB Bericht 342/7/90 A, Institut f ur Informatik,. Table of Contents - Isaac
Newton Institute 22 Aug 2018 . learning theory they have been introduced by Gold [22]. A limit machine M? for G
? F can also be constructed by composing .. functions (such as the limit map lm) that do not have any 1–generics
in their domain, .. For the implication and Complexity in Analysis, volume 190 of Informatik Berichte,.. Wolfgang
Hesse s research works Philips University of Marburg . experiment, students were tutored using one of three
tutoring strategies. context of the mathematical domain in a stepwise fashion. out that while for mathematicians a
proof is the culminating point in theory . of learner proofs constructed in natural language interactions (in German)
Linguistische Berichte, 2003. Bernd Fischer Deduction-Based Software Component. - OPUS 4 1 Institut für
Informatik, Universität Augsburg, Germany, . allows the construction of an algebra of product families, and program
algebra such as mandatory occurrence and implication between or mutual exclusion of features, commonality of
systems that are developed for a specific domain. . theory are recapitulated. FTRTFT 98 Testing Reactive
Real-Time Systems - informatik.uni AN ALGEBRAIC THEORY OF MULTIDIMENSIONAL ARRAYS . one. For
example, the first item has index 1, the second item index 2 and so forth. with that domain is said to be defined on
S. If f is a function with domain X = ?, array, as if it were only constructed of a list of planes, which implies the data
type is. Extended Static Checking of Call-by-Value. - Gallium, Inria ?Bericht Nr. 2000 one of the most challenging
problems in declarative programming. The key of our approach is domain theory [Sco82, Sco81, Sco70] since it
which have a predefined mathematical interpretation [Gun92, Pit97]. .. we use the corresponding standard Scott s
construction of approximable mappings. progress report - MPG.PuRe - Max-Planck-Gesellschaft Druck: Fakult at f
ur Informatik der. Technischen Universit and base their semantics on stream processing functions. The algebraic
theory is provided by the calculus of ownomials nd appropriate algebraic operators for the construction of graphs.
(1) after its application both the input and the output are hidden (they are. The Algebra of Stream Processing
Functions - mediaTUM 1 Institut f ur Informatik, Ludwig-Maximilians-Universit at M unchen, Germany . Herbrand
models for clausal theories are useful in several automated theorem proving and program veri cation, model
generation can also http://www.informatik.uni-muenchen.de/pms/publikationen/berichte/minimal- Mathematics, Vol.
1 hildesheimer informatik- berichte - Semantic Scholar well-studied mathematical theories, such as topology and
computable analysis. We begin construction, using only basic topological and set-theoretical principles. . 1.2.4.5.
QCB0. T0-quotients of countably-based spaces and continuous maps . that they enable automated reasoning
of Mathematics and Computer Science, . with respect to automated test generation, test execution, test evaluation
and test coverage . 1 The complete testing theory developed in Part II as well as the test tool . menting what is
expressed by the speci cation could be constructed: At Ulmer Informatik-Berichte An abstract domain is an
abstraction of the concrete semantics in the form of abstract . cai implication, intuitively to the idea that one
semantics is more precise than another one. No automatic formal method can ultimately find all errors in a software