Complexity Column

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I am pleased to announce that I will be editing a quarterly column on Logic and Complexity for the SIGLOG newsletter. The topic of logic and complexity is quite broad: computational complexity is a central issue for most areas in logic and computer science. While checking if a program has a certain property, or more generally if a statement is true, is typically undecidable, as a community we have made great progress in developing algorithms and building tools that perform these tasks in many useful cases. Similarly we have shown that many key problems are complete for a wide range of complexity classes.

It will be very natural to have complexity and logic columns covering topics such as proof complexity, constraint-satisfaction, database theory, descriptive complexity, complexity of games, etc. Less obvious, but also very desirable, will be columns talking about such amazing topics as the complexity of SAT — we've known since 1971 that SAT was NP complete and thus presumed "hard", however, in the last decade or so SAT and SMT solvers have broken size and time barriers making them extremely useful in practice. To cover such topics, columns written jointly by a practioner and a theoretician would be great.

I welcome theoretical and applied topics from academia and from industry. Columns will be five to ten pages, and must be self-contained enough to be understandable — with some effort — by second-year graduate students. Many columns will focus on new breakthoughs and the series of ideas that led to them. More general surveys of recent directions and progress in an area will also be most welcome. I will strive to have clearly written columns; I see this column not only as a resource for the SIGLOG community, but also for researchers in other areas of computer science wanting to learn about current work.

I will be reaching out to various people, but I also would be very pleased to receive suggestions of people to write and topics to cover. The idea of this column is to cover our area broadly and yet in depth; I may be leading the column, but success will depend on all of you. So please don't be shy if I haven't asked you yet; let me thank you in advance for ideas for columns written by yourself or others.