



LOGICAL METHODS  
IN COMPUTER SCIENCE

# Special Festschrift Issue in Honor of Jiří Adámek

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Edited by:  
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**Group photo from the JirkaFest in March 2016**

## PREFACE

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During the last four decades Jiří Adámek has worked on a large variety of topics and become a leading expert in category theory and its applications in algebra, topology and computer science. Jiří has very broad research interests, and an encyclopedic knowledge of mathematics to boot. Amazingly, Jiří has made significant and deep contributions all over. For example, he is well-known for his work on fixed points of functors, which provide the solutions to recursive domain equations and are therefore indispensable for the semantics of programming languages and the specification of abstract data structures. Other important contributions of Jiří are in categorical model theory, and more recently, in the theory of coalgebras and the foundations of automata theory. His work has always shown great mathematical beauty, and his writing style demonstrated his ability to present highly non-trivial material with great clarity.

Jiří started his academic career in socialist Prague, where he earned his C.Sc. degree in 1976 at the Czech Technical University under the direction of Prof. Věra Trnková on the topic “Categorical Theory of Automata”. But it was not until the 1990s that he could have Ph.D. students of his own. We include short statements from most of those students.

Throughout his career, Jiří has been an extremely prolific author, having published more than two hundred research papers and written nine monographs and textbooks. For example, his book *Abstract and Concrete Categories*, co-authored with George Strecker and Horst Herrlich, is one of the most comprehensive textbooks on category theory and has by now contributed to the education of several generations of researchers in categorical methods. The monographs *Automata and Algebras in a Category*, coauthored with Věra Trnková, and *Locally Presentable and Accessible Categories*, co-authored with Jiří Rosický, have become standard references. Moreover, Jiří is still in the midst of his unusually productive career and is continuing to make important contributions to mathematics and theoretical computer science.

Jiří also has actively served the category theory and theoretical computer science community for many years. But his greatest service to the community is undoubtedly this journal, *Logical Methods in Computer Science*. He has founded the journal in 2004 and was its executive editor until 2015. He was the main driving force that brought the journal to life and that made it a big success—a high quality open-access venue for research articles on logic in computer science taken in a broad sense.

So what better way to celebrate Jiří’s 70th birthday is there than this Festschrift, with a large variety of papers attributed to him and a workshop, PSSSL’99 (aka. JirkaFest), featuring a diverse range of speakers, held in Braunschweig in March 2016. Both the Fest and Festschrift come with a great deal of love for Jiří and in acknowledgement of what he has taught us in the past, present, and future.

We would like to thank all the authors for their contribution to this Festschrift and also for their help in the reviewing and publication process. We are also thankful to the additional reviewers. In addition, our gratitude goes to the managing editors and the editor-in-chief, Lars Birkedal, for their support of this Festschrift. Last but not least, Katja Barkowski, Jürgen Koslowski, Frank Rust and Henning Urbat deserve our special thanks for organizing JirkaFest, the PSSSL meeting in honor of Jiří in 2016.

## Jiří Adámek's Doctoral Students

Lurdes Sousa: *Reflective and Orthogonal Hulls*, Universidade de Coimbra, 1997

“I am very grateful to Jiří Adámek for having accepted to be my PhD supervisor – and to my supervisor Manuela Sobral for having invited him – and for his invaluable advice. I had plenty of freedom and that was a very good way. I have learnt immensely from him along the years. Once, when my daughter was a little child, she asked me: “What is mathematics for you?” Without thinking, I answered: “Adventure, challenge, inspiration!” Working on mathematics with Jirka has been all that, and certainly a great inspiration.”

Jiří Velebil: *Categorical Domain Theory*, Czech Technical University in Prague, 1998

“Jirka, besides being an excellent teacher of tricks of category theory, is, I am proud to say, also my friend. I thank him for all the long hours of conversation, walks, listening to music, watching the movies, discussing books, missing the trains on the ferries, and countless other things. Thank you.

Dear Jirka, I wish you many happy returns !!!”

Victor Pollara: *Free Algebras in SFP*, Technische Universität Braunschweig, 1999

“The years spent with Jirka before and during my Doctoral studies were some of the richest years of my life. He shared his gifts freely in diverse areas (e.g., math, music, languages) and they were gifts that keep on giving to me in subtle but significant ways. Even 18 years later I will occasionally have an insight – something that I didn’t understand as a student – but suddenly now falls in place. These are reverberations of a caring, passionate, gifted teacher. He was a great mentor and remains a true friend.”

Stefan Milius: *Coalgebras, Monads, and Semantics*, Technische Universität Braunschweig, 2005

“I met Jirka for the first time when he was the lecturer of a basic second year theoretical computer science course everyone took. Later, Jirka and Victor Pollara, then his PhD student, invited me to a pub and over a beer suggested whether it might not be a good idea for me to consider doing my diploma thesis research with him on a topic in category theory. I had only heard categories mentioned once and very vaguely in some math lecture. So I went on to take a first course on cats with Jiri and was very touched by the beauty and clearness. After spending a year in Canada (learning more categories) I started a PhD with Jirka, and this was the beginning of a long joint journey into research in which Jirka was first my supervisor but soon became close collaborator and dear friend. Jirka, I would like to thank you for everything, all the support and encouragement when I was a PhD student, the advise you have given me on countless occasions, and the fun we had in the many years we have been doing research together. This journey still goes on, and I wholeheartedly admit that I am very happy to

be on board, very unlike those sailors who got lured onto the boat over a free beer.”

Daniel Schwencke: *Compositional and effectful recursive specification formats: distributive laws and the semantics of recursion*, Technische Universität Braunschweig, 2013

“Shortly after starting as a student at university, I found myself confused by an algebra course: many different results were presented, but I failed to find an overall picture. This changed years later, and is closely related to Jirka, his research fields and his passion for and focus on beautiful mathematics: I am grateful for having seen full proofs in those courses taught by Jirka, for the challenge he posed to me to dig right into coalgebra and category theory during my master thesis (“Diplomarbeit”), his clear opinion when asking him any question as a PhD student, his guidance towards scientific working, effective mathematics by counterexamples, and his investment in non-negligible amounts of cake for the department’s weekly seminar. But still, there needs to be said more, besides mathematics. His long and successful career could not draw Jirka only a bit away from being modest and generous, and his friendliness is great. I remember that once he simply invited all department members to his home. So I am thankful for having enjoyed his great character traits, and owe Jirka a lot, much more than just an understanding of and the beautiful category theoretic view on algebra as a whole.”

Henning Urbat: *A Categorical Approach to Algebraic Language Theory*, Technische Universität Braunschweig, 2018

“During my graduate studies in Braunschweig, it was Jiří’s two-semester introduction to the beauty of category theory in computer science that determined my scientific fate, and I was very lucky for later having the opportunity to join his research group as a PhD student. Jiří’s scientific curiosity and enthusiasm for research have been a great inspiration over the last years, and without his unremitting encouragement, support, and interest in my work, my thesis would not have been possible. I learned a great lot from him through countless mathematical discussions, whiteboard sessions, and our work on joint papers. I am particularly grateful that he gave me the opportunity to travel to numerous international conferences in order to present our work and to meet the top researchers in our area.”

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