ELSEVIER

Available online at www.sciencedirect.com

SCIENCE DIRECT®

Theoretical Computer Science 324 (2004) 133–135

Theoretical Computer Science

www.elsevier.com/locate/tcs

Foreword

Steve Seiden died in a tragic accident on June 11, 2002. Steve was an avid cyclist and died when a group of cyclists were run over, Steve and fellow cyclist Timmy Cappo were killed. Steve died while his wife Tracy was still carrying to term their firstborn son, Steve Jr.

Steve was very quiet and unassuming person, with a deep passion for doing research. Those that knew him well were well aware that underneath the quiet exterior there lay a very sharp wit with astonishingly intelligent observations to make.

Steve has been extraordinarily productive with over 25 research papers. Steve was never afraid of a challenge, his work includes many very difficult results. Important problems that others are afraid to tackle, even after Steve made them much more accessible than before.

Steve was very well loved by the research community. At the 3rd Dagsthul workshop on online algorithms, the end of June 2002, Giorgio Ausiello, editor in chief of TCS-A, suggested a special issue of TCS on online algorithms in Memoriam of Steve. We were delighted to act as editors for this special issue.

We received a great many very good papers, only part of which could be accepted to this special issue. The community at large was very happy to contribute towards this special issue, whether by sending submissions or by acting as referees for submissions. The time scale for a special issue does not usually allow multiple rounds of referee and submission. However, in this case, we were able to perform multiple rounds of referee/correction because of the very high speed at which reports were prepared and the tremendous collaboration we got from authors and referees.

Amos Fiat[a]
Sandy Irani[b]

[a] *Tel-Aviv, Israel*
E-mail address: fiat@math.tau.ac.il

[b] *Irvine, CA, USA*
E-mail address: irani@ics.uci.edi

0304-3975/$ - see front matter
doi:10.1016/j.tcs.2004.05.011

In Memoriam, Steve Seiden

It has now been over a year and a half since I heard the news of Steve Seiden's sudden and tragic death. In some ways I have grown accustomed to the fact that I no longer hear from him; in other ways, I am still in shock. Everything about Steve was on an upward trajectory. Steve had maintained a tremendous rate of growth as a researcher even after he left UC Irvine where I was his Ph.D. advisor. A lot was coming together for him: he was very productive in his research, collaborating with many different people, branching out into new areas of inquiry and generally maturing as a researcher. In his personal life, he was expecting a new son and preparing for the radical change that parenthood would bring to his life. He was clearly very excited about becoming a father. I think the fact that he was hitting his stride in so many different areas of his life has made his sudden death all the more difficult to accept.

Steve was my first Ph.D. student as a new assistant professor. I was most fortunate to have such an outstanding student as I myself learned how to be a research advisor. Of course, Steve made my job rather easy. One of the things that impressed me right away in working with him is that even as a relatively new graduate student, he was an independent problem solver and did not need much direction in mastering known techniques or devising new approaches to a problem. Very early on, he seemed more like a colleague than a student in his ability to articulate his technical ideas, even when the idea was new and only partially developed. I always enjoyed his frequent visits to my office to relate his most recent line of attack for the problem he was currently working on. He clearly enjoyed sharing the process of solving problems with other people which I think accounts for his many fruitful collaborations with other researchers.

Another thing that impressed and surprised me about Steve was his tenacity in solving problems. For some reason, I did not expect that kind of drive out of such a gentle and mild-mannered person. This determination was a real asset to him in his work. He attacked difficult problems and often made significant progress on them.

Most of Steve's work focused on the use of randomization in online algorithms. As a student, his first set of results were on Metrical Task Systems, a general model for online problems. Steve and I together developed tight bounds for an important special case of the metrical task system model, solving a problem that was left open in the initial paper on the subject. Steve went on to develop an algorithm for another particular class of metrical task systems. The proof of the upper bound for this algorithm makes use of a solution to a variant of the model which he formulated called 'Unfair Metrical Task Systems'. Interestingly, this problem and corresponding solution were also developed independently by another group of researchers and used to find the first polylogarithmic randomized algorithm for the general case, demonstrating that Steve had really hit on the essential difficulty in that problem. The polylogarithmic algorithm for the general case was an important breakthrough in online algorithms.

More recently, Steve proved a 'decomposition theorem' for the k-server problem which allows one to get polylogarithmic randomized algorithms for certain types of metrics. This is the kind of preliminary result which led to the polylogarithmic randomized algorithms for general Metrical Task Systems. The k-server problem has been a

'holy grail' for researchers in online algorithms. Steve's result is important in and of itself since there are only two results known for the k-server problem which beat the best deterministic algorithm, and these are for very restricted special cases.

Steve also worked on randomized algorithms for classical problems in multiprocessor scheduling and bin packing. Among his most noteworthy results is the best known upper bound for online bin packing to date.

The papers in this special issue are reflective of the diverse set of problems which interested Steve. I have been very pleased to see so many members of our theory community contribute to this special issue as a way to commemorate Steve's life. This is truly a testament to the affection and high regard with which Steve was held by so many researchers in our field. I know that I am not alone in feeling the terrible loss of such a valued colleague and friend.

Sandy Irani

I remember Steven as a quiet and introspective man, and as a very sharp observer. He came to Graz in September 1997 to stay with us for one year; to a foreign country with a foreign language. Two or three weeks after his arrival, he surprised me by making several half critical, half funny remarks about the strict hierarchy in the Austrian university system (which admittedly is strange and old-fashioned). He had understood the difference between the "Du"-form and the "Sie"-form in addressing people in German, and how it is used to express that person x stands above person y in the hierarchy; this difference and this hierarchy do not exist and cannot be expressed in the English language. Another thing that Steven always found amusing was the obsession of the inhabitants of Graz with Arnold Schwarzenegger (who was born a long time ago in a village near Graz). Whenever Steve opened a local newspaper (he said), he could be sure to find Schwarzenegger's name or picture somewhere inside. Steve liked to call this "Where is Arnie?", the Austrian version of the American "Where is Waldo?". But of course, what I remember most is Steven's face and Steven's smile when he said "I think I have solved this problem…".

Gerhard J. Woeginger