

# INTERVIEW WITH ALEXANDRA SILVA

## RECIPIENT OF THE 2017 PRESBURGER AWARD

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The European Association for Theoretical Computer Science (EATCS) established the Presburger Award<sup>1</sup> in 2010. The award is presented each year at ICALP “to a young scientist (in exceptional cases to several young scientists) for outstanding contributions in theoretical computer science, documented by a published paper or a series of published papers.”

The 2017 Presburger Committee, consisting of Marta Kwiatkowska (chair), Stephan Kreutzer and Jukka Suomela, has selected Alexandra Silva (Senior Lecturer at University College London, UK)<sup>2</sup> as recipient of the 2017 EATCS Presburger Award for young scientists.

To my mind, this is a wonderful choice. Alexandra Silva is one of the brightest rising stars within our research community and, in a very short period of time, has established herself as a research leader and a mentor for young researchers, who somehow also finds the time to serve the theoretical-computer-science community in a variety of roles.

I interviewed Alexandra Silva (abbreviated to AS in what follows) via email and present her answers to my questions in what follows. I hope that the readers of the Bulletin of the EATCS will enjoy reading the text of the interview and will find it as interesting as I did. Most importantly, I trust that young researchers and students in (theoretical) computer science will be inspired by Alexandra’s example to pursue a career in our exciting field of science.

### The interview

**LA:** Alexandra, first of all, congratulations for the 2017 Presburger Award! I wanted to start by asking you about your background and when you became in-

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<sup>1</sup><http://eatcs.org/index.php/presburger>

<sup>2</sup><http://www.alexandrasilva.org/>

terested in computer science. When did you decide to pursue a PhD and a career in academia? Is there anyone who played an important role in that decision?

**AS:** I wanted to study mathematics, but my brother convinced me I should do a double bachelor in maths and CS because otherwise I would not get a job (laughs). I did a Math and CS degree at Universidade do Minho (Braga, Portugal) and fell in love with the foundations of CS. I decided to pursue a PhD after a very happy research project at the end of my degree supervised by Joost Visser and Jose Nuno Oliveira. I worked very closely with Joost for 6 months and he was a great inspiration in my career and taught me the basic principles of research. Another person who was instrumental was Luis Barbosa: he motivated me to go abroad for a PhD and to ask Jan Rutten to be my advisor.

**LA:** So far, you have studied and worked in Portugal, the Netherlands and the UK, and have collaborated with researchers in Germany and the US, amongst others. How important has this variety of experiences been for your career development? Do you prefer to work alone or to collaborate with other people?

**AS:** Working in different countries and being exposed to different cultures has made me a more flexible and resilient person. This has been very important in my career, also to help me deal with all the rejected papers and grant proposals! I am happy to meet new people and discuss research. When I am excited about a new idea I like to share it with my colleagues and discuss ways to improve it!

**LA:** Could you tell our readers briefly what your main research interests are today?

**AS:** These days I am very keen on applications of automata learning in verification. Frits Vaandrager planted the seed in 2011 when I joined Nijmegen and 4 years later I really saw the light and since then have been very excited on working in understanding existing learning algorithms and improving them, using a categorical perspective on their correctness proofs. I am currently exploring connections with my other passion — Kleene algebra and extensions thereof — and looking at learning NetKAT specifications from networks.

**LA:** These days you are managing a fairly large research group. Have you found it difficult to become the leader of a group, with the responsibility of managing substantial research grants and of making sure that the young researchers in the group thrive and produce the best work they can? Is there any specific strategy you adopt in managing your group?

**AS:** I find it very exciting but at the same time the responsibility does overwhelm me at times. I see these super bright young minds and would like to help all of them thrive, in ways other people have helped me in my career. My current strategy is to make sure they know I am always available to talk and help but

more importantly I want them to realise they are part of a team and support can come from anyone in that team. We have a slack channel that is very active and in which all issues are discussed — from completeness of Kleene Algebra to how you can trick image recognition software to think a puppy is fried chicken (credits to Joshua Moerman!).

**LA:** I know that you have a strong interest in gender issues and in increasing the number of women in computer science and their visibility within the community. What has been your experience as a young woman in TCS? Do you have any advice to offer to the community in order to attract and retain more talented female students? Did you have any female role model and how important do you think they are in general?

**AS:** I was very lucky at the beginning of my career and throughout my PhD and post-doc I never felt there was any problem. This was in part due to my advisors — Jan Rutten, Marcello Bonsangue, and Dexter Kozen — who were real mentors throughout the years and always made me feel welcome in the research environment of their groups. It was when I became a faculty member that I felt animosity from several male colleagues. One told me that I only got my first faculty job because I was a woman. That day I truly thought it was the end of my career. I survived that incident and the many that followed but it did leave marks and a strong will to avoid others having to go through the same. When Prakash Panangaden invited me to join the SIGLOG executive board I saw an opportunity to do something for the community and pushed that we implement anti-harassment policies in SIGLOG conferences and try to foster a welcoming environment for everyone. I am not sure I have any good advice on how to attract female students — I think as a community we need to strive to create more welcoming environments and start new trends in which being a woman in TCS becomes a normal thing! Catuscia Palamidessi and Marta Kwiatkowska are great female role models and have inspired me at various points in my career. I have also had many male role models, including yourself, for which I am very grateful!

**LA:** Finally, you were one of the prime movers in establishing the Logic Mentoring Workshop at LICS. Is there any advice you'd give a computer science student with an interest in carrying out research in TCS and working in academia?

**AS:** Whatever topic you decide to work on, the most important thing is to be excited about it. Happier research is better research, in my opinion. Also, the topic you choose today will not define you in the future: that is the beauty of working in academia, one can change research topic during the years! From a more practical perspective, it is important to have mentors and role models that will help you make the right decisions at important turning points of your career.