

AIDA NAZARIKLORRAM - DR. POUYAN ZIAFATI

## MY BEST FRIEND IS A ROBOT

**Socially assistive robots are often used in hotels or on business fairs to communicate with guests and visitors, and increasingly in more sensitive areas, such as care and health. In 2016, two Iranians, Aida Nazariklorram and Dr. Pouyan Ziafati, created LuxAI, a spin-off of the University of Luxembourg, that gave birth to the first assistive QT robot in Luxembourg in the framework of emotional ability training for children with autism, among other areas of application.**

Text: Marie-Hélène Trouilleux - Photos: Laurent Antonelli / Agence Blitz

### Coming from Iran, what brought you to Luxembourg?

**Pouyan Ziafati:** “I hold a doctorate in artificial intelligence (AI) and robotics. I completed a master’s degree in Italy and, as a doctoral student, I was looking for a PhD position in Europe. The PhD degree (*PhD stands for ‘Doctor of Philosophy’, editor’s note*) is an advanced postgraduate degree involving three or more years of independent research on a topic and the writing of a thesis that offers a genuine contribution to knowledge. I decided to come to Luxembourg. The country is a good place to do a PhD: the university and research institutions offer a wide range of multidisciplinary programmes and high level experts. I wrote my doctoral thesis at the SnT - Interdisciplinary Centre for Security, Reliability and Trust - of the University of Luxembourg and we founded LuxAI based on it.

**Aida Nazariklorram:** “I’m a doctor and I have served as a medical doctor for three years in Iran. I then quit my job in Iran to join Pouyan in Luxembourg. We have known each other since childhood and we are a married couple. We wanted to set up our own company and find something of interest for both of us. Given our areas of competence, we have been looking for an innovative idea with social impact for the health sector. Together, we have been working on QT (*an abbreviation for ‘cutie’, editor’s note*) for the past two years now and in 2016, we gained the support of the Luxembourg state, through the PoC (Proof of Concept), the FNR’s (Fonds National de la Recherche) facilitation programme that provides financial support to universities and research institutes in Luxembourg and help them turn

their research ideas into commercially viable innovations. In a word, the FNR and the University of Luxembourg provided support for the founding of our company, LuxAI, in April 2016, and gave us the opportunity to start producing our robot, which is the first social robot to originate in Luxembourg.

### What is a social robot?

**A.N.:** “Robots are already familiar within factories, but these robots, however, typically operate in highly structured environments. They operate with limited human interaction and in some instances have replaced the human workforce. Today, innovation and artificial intelligence have given robots the ability to interact with us and exhibit social behaviours such as recognising, following and assisting their owners. QT is a social robot designed to interact with people, with the right expressions and reactions. Such robots have to process a great deal of information very quickly, and adapt their behaviours according to the interaction. They capture facial expressions and react to your expressive face, or analyse cards showed to them and then operate using specific configurations.

**P.Z.:** “We could extend its applications to other sectors, such as education and training. QT can be used in daycare centres to read stories or support children in learning vocabulary, for example, but also in schools, in the entertainment industry or in geriatric care.

### Can QT robot be easily programmed?

**P.Z.:** “Absolutely! This is the advantage of QT and what makes it so easy to use. The fact that it is user-friendly also makes our

social robot suitable for the mass market. You do not need to be a computer expert. We provide the interface, the software and the apps, but anyone can program the robot intuitively and naturally and customise it for each patient in less than 20 minutes.

### Where can a social robot be of help?

**A.N.:** “Currently, there are several robots that are being developed to interact with autistic children. QT is there to complement and support qualified trainers and therapists in their work, not to replace them. Robots have unlimited time and can take over routine tasks. They have been designed to react to very specific tasks and orders.

For example, when working with autistic children, the robots, as opposed to human beings, always have the same voice, the same facial expression and the same reactions and responses, so that children don’t become frustrated or confused. Their improvement while working with the QT robot is very promising.

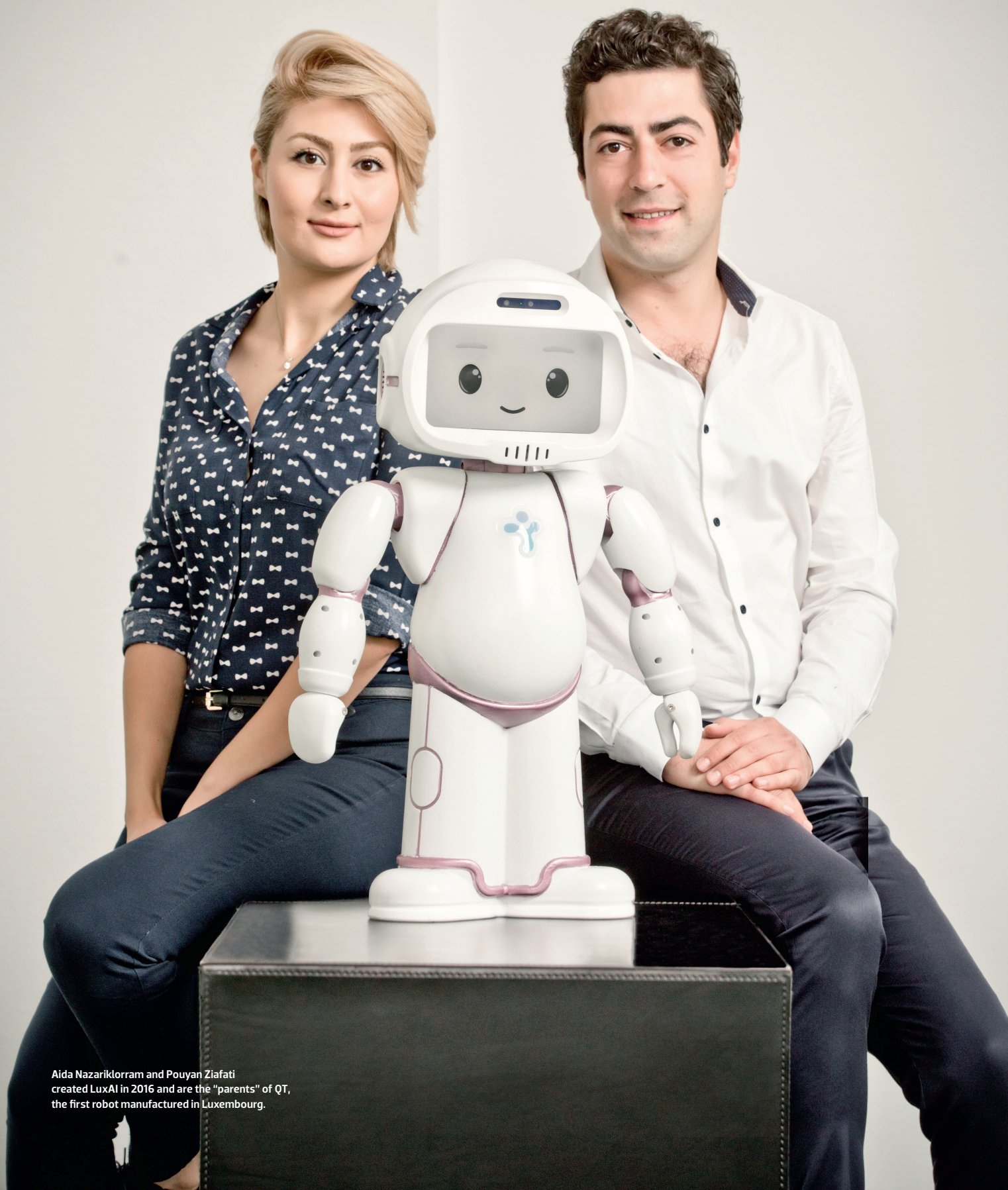
**P.Z.:** “We are currently working with Fondation Autisme Luxembourg and three departments within the University of Luxembourg to develop applications for autism therapy and behavioural regulation, geriatric medicine and the teaching of foreign languages to children in kindergartens.

### What are the costs to acquire such a robot?

**P.Z.:** “QT robot costs about 5,500 euros. To date, we have built three robots. They are being used at the University of Luxembourg to assist in rehabilitating patients who have suffered a stroke or who need cognitive stimulus. Another research project is related to autism and we work in collaboration with the Fondation Autisme Luxembourg.

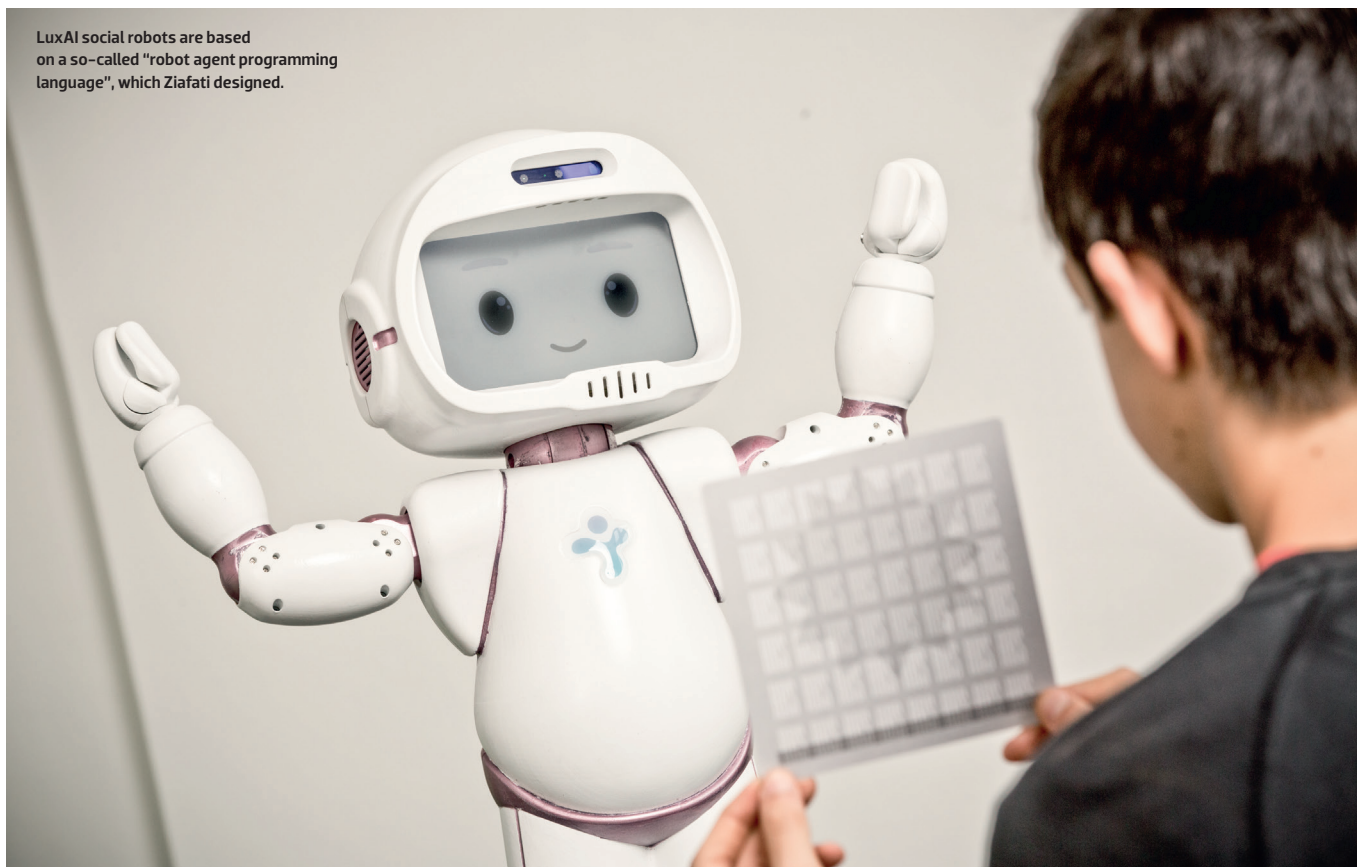
### Did you get some help to make QT robot popular?

**A.N.:** “It is always very easy to meet people in Luxembourg. We attend many networking events organised by the Chamber of Commerce and other organisations. Again, it is a small country, but it is an amazing country for its highly diversified and start-up-friendly environment. In June 2016, we participated in the Mind&Market event, where we took home the first prize for our socially assistive robot. 26 project holders



Aida Nazariklorram and Pouyan Ziafati created LuxAI in 2016 and are the "parents" of QT, the first robot manufactured in Luxembourg.

LuxAI social robots are based on a so-called "robot agent programming language", which Ziafati designed.



presented their start-ups to five juries in various fields: engineering, sustainable development, platform interaction, smart data and e-health. Each of us had five minutes to introduce our project and received five minutes of jury feedback, followed by five minutes of Q&A. The Mind&Market Forum made QT more popular and was organised by Deloitte, the University of Luxembourg, the FNR, Luxinnovation and Mind&Market Belgium. Further, we also won the Healthcare Facilities Award in October 2016 and I was given some financial support from the Lions Club as an individual, to encourage my innovative work with social impact. Besides our work with Fondation Autisme Luxembourg and our collaboration with the University of Luxembourg, we are also working with two rehabilitation centres: Rehazenter and RBS – Center fir Altersfroen.

**P.Z.:** “Last summer, we took a course at the Entrepreneurship Summer School, organised by the London Business School. We had a positive and enriching experience which came right on time! Over the course of the summer the programme provided us with the relevant skills and insights to research a

target market and industry and to turn an idea into a viable business. Lux Future Lab supports us and provides facilities, educational resources, professional services and networking opportunities. We received useful support from the House of Entrepreneurship concerning how to set up a company. Luxinnovation was also a great source of contacts and helped us with our business plan. Paul Wurth InCub supported us in developing our business plan and creating our market entry strategy. I also recently joined nyuko – Start-Up Nation Luxembourg as a mentee.

**What challenges have you encountered and how did you overcome or work around them?**

**P.Z.:** “The most challenging aspect for LuxAI is that the robot we have created did not exist in centres. So having to work with the end users and teaching people to program the robot is totally new and quite challenging. Parents are curious and open in to trying new solutions to help their children. Having realised this, our next step will be to build QT robots for private use. QT is a Luxembourg-

born multilingual robot and speaks four languages. It looks natural to us to expand to Germany, Belgium, United Kingdom and France. Some autism centres in France have already shown their interest.

**A.N.:** “You have to choose one thing, focus on it, make it work and then expand. When you start a company, you only have the positive aspects in mind. Then there comes a time when you realise that you have a lot to do and you can’t go back to your former life. You have to overcome your fears and take action. I’m going to quote Oprah Winfrey here because no one says it better: ‘I don’t believe in luck. I believe luck is being prepared when the opportunity comes along.’ Your project turns to a passion and becomes omnipresent. Managing a start-up is a lifestyle!

**What is your best achievement?**

**A.N.:** “Our best achievement is not about money and business. It is more about how LuxAI’s robots can change people’s lives for the better. It is a good product and we are on the right track!” ●

[www.luxai.com](http://www.luxai.com)