



AI Profiles: An Interview with Maja Matarić

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Abstract

This column is the fourth in our series profiling senior AI researchers. This month we interview Maja Matarić.

Introduction

Our fourth profile for the interview series is Maja Matarić, Vice Dean for Research and the Director of the Robotics and Autonomous Systems Center at the University of Southern California.

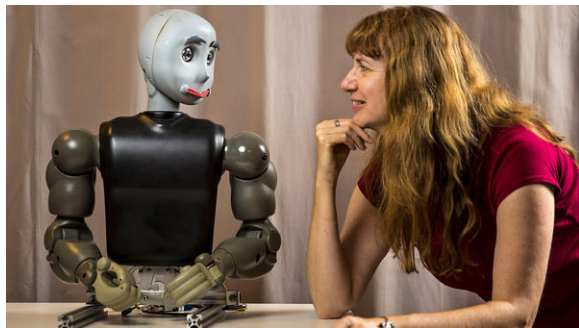


Figure 1: Maja Matarić

Biography

Maja Matarić is professor and Chan Soon-Shiong chair in Computer Science Department, Neuroscience Program, and the Department of Pediatrics at the University of Southern California, founding director of the USC Robotics and Autonomous Systems Center (RASC), co-director of the USC Robotics Research Lab and Vice Dean for Research in the USC Viterbi School of Engineering. She received her PhD in Computer Science and Artificial Intelligence from MIT in 1994, MS in Computer Science from MIT in 1990, and BS in Computer Science from the University of Kansas in 1987.

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Getting to Know Maja Matarić

How did you become interested in robotics and AI?

When I moved to the US in my teens, my uncle wisely advised me that “computers are the future” and that I should study computer science. But I was always interested in human behavior. So AI was the natural combination of the two, but I really wanted to see behavior in the real world, and that is what robotics is about. Now that is especially interesting as we can study the interaction between people and robots, my area of research focus.

Do you have any suggestions for people interested in doing outreach to K-12 students or the general public?

Getting involved with K-12 students in incredibly rewarding! I do a huge amount of K-12 outreach, including students, teachers, and families. I find the best way to do so is by including my PhD students and undergraduates, who are naturally more relatable to the K-12 students: I always have them say what “grade” they are in and how much more fun “school” is once they get to do research. The other key parts to outreach include letting the audience do more than observe: the audience should get involved, touch, and ask questions. And finally, the audience should get to take something home, such as concrete links to more information and accessible and affordable activities so the outreach experience is not just a one-off. Above all, I think it’s critical to convey that STEM is changing on almost a daily basis, that everyone can do it, and that whoever gets into it can shape its future and with it, the future of society.

How do you think robotics or AI researchers in academia should best connect to industry?

Recently connections to industry have become especially pressing in robotics, which

has gone, during my career so far, from being a small area of specialization to being a massive and booming area of employment opportunity and huge technology leaps. This means undergraduate and graduate students need to be trained in latest and most relevant skills and methods, and all students need to be inspired and empowered to pursue skills and careers in these areas, not just those who self-select as their most obvious path; we have to proactively work on diversity and inclusion as these are clearly articulated needs by industry. There are great models of companies that have strong outreach to researchers, such as Microsoft and Google to name two, both holding annual faculty research summits and having grant opportunities for faculty to connect with their research and business units. As in all contexts, it is best to develop personal relationships with contacts at relevant companies, as they tend to lead to most meaningful collaborations.

What was your most difficult professional decision and why?

It's hard to pick one, but here are, briefly, three that are interesting: 1) I had to actively choose whether to speak up against unfair treatment when I was still pre-tenure and in a very under-represented group, or to stay silent and not make waves. I spoke up and never regretted being true to myself. 2) I had to choose whether to take part of my time away from research to get involved and stay involved in academic administration. I chose to do so, but also chose to never let it take more than the official half time, and never stomp on my research. 3) I had to choose whether to leave academia for a startup or industry. These days, that is an increasingly complex choice, but as long as academia allows us to explore and experiment, it will remain the best choice.

What professional achievement are you most proud of?

The successes of my students and of my research field. Seeing my PhD students receive presidential awards while having balanced lives with families and still responding to my emails just makes me beam with pride. Pioneering a field, socially assistive robotics, that focuses on helping users with special

needs, from those with autism to those with Alzheimer's, to reach their potential. Seeing that field become established and grow from the enthusiasm of wonderful students and young researchers is an unparalleled source of professional satisfaction.

What do you wish you had known as a Ph.D. student or early researcher?

Nobody, no matter how senior or famous, knows how things are going to work out and how much another person can achieve. So when receiving advice, believe encouragement and utterly ignore discouragement. I am fortunate to be very stubborn by nature, but it was still a hard lesson and I see too many young people taking advice too seriously; it's good to get advice but take it with a grain of salt: keep pushing for what you enjoy and believe in, even if it makes some waves and raises some eyebrows.

What would you have chosen as your career if you hadn't gone into robotics?

I think about that when I talk to K-12 students; I try to tell them that it is fine to have a meandering path. I finally understand that what really fascinates me is people and what makes us tick. I could have studied that from various perspectives, including medicine, psychology, neuroscience, anthropology, economics, history... but since I was advised (by my uncle, see above) to go into computer science, I found a way to connect those paths. It's almost arbitrary but it turned out to be lucky, as I love what I do.

What is a "typical" day like for you?

I have no typical day, they are all crazy in enjoyable ways. I prefer to spend my time in face-to-face interactions with people, and there are so many to collaborate with, from PhD students and undergraduate students, to research colleagues, to dean's office colleagues, to neighbors on my floor and around my lab, to K-12 students we host. It's all about people. And sure, there is a lot of on-line work, too, too much of it given how much less satisfying it is compared to human-human interactions, but we have to read, review, evaluate,

recommend, rank, approve, certify, link, purchase, pay, etc.

What is the most interesting project you are currently involved with?

Since I got involved with socially assistive robotics, I truly love all my research projects: we are working with children with autism, with reducing pain in hospital patients, and addressing anxiety, loneliness and isolation in the elderly. I share with my students the curiosity to try new things and enjoy the opportunity to do so collaborative and often in a very interdisciplinary way, so there is never a shortage of new things to discover, learn, and overcome, and, hopefully, to do some good.

How do you balance being involved in so many different aspects of the robotics and AI communities?

With daily difficult choices: it's an hourly struggle to focus on what is most important, set the rest aside, and then get back to enough of it but not all of it and, above all, to know what is in what category. I find that my family provides an anchoring balance that helps greatly with prioritizing.

What is your favorite CS or AI-related movie or book and why?

*Wall*E*: it's a wonderfully human (vulnerable, caring, empathetic, idealistic) portrayal of a robot, one that has all the best of our qualities and none of the worst. After that, *Robot and Frank* and *Big Hero 6*.



Help us determine who should be in the AI Matters spotlight!

If you have suggestions for who we should profile next, please feel free to contact us via email at aimatters@sigai.acm.org.
