



## “Queuing Theory”

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Dr Tami Tamir, new vice dean of the Efi Arazi School of Computer Science at IDC Herzliya, studies algorithms and queuing theory. She also plays basketball in the National League.

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**By Gal Gingis**

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Enjoyment and pleasure were the two main emotions displayed by **Dr Tami Tamir**, the new vice dean of the Efi Arazi School of Computer Science at IDC Herzliya, during our meeting. The fascinating interview took place in Tamir’s office in the Efi Arazi Building on the IDC campus, a wonderfully practical room in which the desk is placed alongside the window, facing the wall - to “save space”, according to Tamir. The office is decorated with brightly colored pictures, giving a relaxing, youthful atmosphere and blending in well with the colorful and attractive work environment. Tamir explains that she enjoys the company of the school faculty, who, she says, are “free of internal politics” and welcoming.

It will therefore not be surprising that Dr Tamir “enjoys coming to work”, even though this is already her fifth year at the IDC.

Tamir lives in Zichron Ya'acov, and has three children. She completed all three of her degrees at the Technion, where she also met her husband Boaz. After completing her master’s degree, she worked for Intel on the development of the MMX processor. For those of you who are unfamiliar with the field, the MMX is a technology intended to improve computer processor performance by making the mathematical calculations quicker and

more efficient, and to improve the quality and ease of our work with man’s best friend, the computer.



After completing her studies, Tamir went on to post doctorate studies at the University of Washington in Seattle, but according to her, she always knew she would come back to Israel sooner or later, and she indeed did upon receiving an offer to join IDC Herzliya as a lecturer.

Dr Tamir studies algorithms. I imagine that most of you have already forgotten, or perhaps never knew, what an algorithm is. “Imagine a maze of roads”, Tamir explains to me patiently. “Now imagine yourself driving along in your



car and looking for the shortest route.” This is an algorithm.

Tamir gives VOD (video on demand) as an example. According to her, in the past, in the days of the “broadcasting schedule”, the problem area for computer scientists was small because the range of programs was defined in advance and could not be changed. Today the end of the “broadcasting schedule is fast approaching, thanks to the fact that more and more people watch television broadcasts on demand, at the time of their choice. In order to provide this viewing model, many algorithms have to be developed with regard to the allocation of resources in the system and the personal character of the broadcasts. For example, the digital converter sitting on your television now has to be able to recommend a film for you to watch. It is also necessary to take into account that if someone wants to watch a particular film, there will probably be other users who also want to watch the same film, at or around the same time. How to characterize the user’s viewing habits, how to ensure that there is content available to every viewer at an acceptable technical standard, and many other questions come up along with the advances and developments in the media.

Another field in which Dr Tamir is involved is game theory and the Internet. One of the fascinating issues in this area is the subject of content websites, or more accurately, payment for the content on the Internet. This is an issue that combines a wide range of fields, from business management, through psychology, to computer science. The basic problem arises because we are talking about a product known as digital goods. This is a non-perishable product and it can be

provided in unlimited quantities. Therefore, on the face of it, once it has been created it is worth adding new customers even at a minimal price.

Another of the fields in which Dr Tamir works is “queuing theory”. In fact, anyone could be a scientist in this field, since whenever we go to the supermarket and come to pay for the goods we are purchasing, we come up against the question of which checkout to choose, and which will be the best line to stand in. Queuing theory looks at what happens when an economic component is introduced into the equation that will put a price on our preference for one checkout or another, for example, choosing a checkout without a line will involve an additional payment, and asks the question – how much would we be willing to pay?

Dr Tamir notes that one of her objectives is to see the Efi Arazi School of Computer Science continue to grow and develop. She hopes that the school will be a source of attraction for both undergraduate and graduate students, and say that this is already the case, as witness the threshold for admission, which is raised every year.

At the end of our interview, Tamir wants to give a personal message to students living in a world where economic aspirations sometimes prevail over the other goals of our lives. According to her, it is important to try and make the most of the academic world, and put off going out into the labor market for as long as possible. On completing the degree course this will become inevitable, and so it is preferable for students to make the best of their time and learn as much as they can in the academic framework.

Even after completing your studies and dedicating yourselves to your careers,



Tamir recommends continuing to make time for other things besides work and career. She herself, for example, in addition to her other occupations, is an active member of the Hapoel Zichron Yaacov basketball team, in the women's National League. According to her, "there is nothing like clapping my hands at the end of the Thursday computer science colloquium lecture in the knowledge that the next time I clap my hands will be during the warm-up for the game."