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From MIT to IIT

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By Barbara Frank and Amanda Jaffe-Katz

Miriam (Mish) Madsen's journey from MIT's Media Lab to a three-month internship at the Max Wertheimer Minerva Center for Cognitive Processes and Human Performance in Technion's Davidson Faculty of Industrial Engineering and Management is the natural outcome of her heading the MIT Hibur steering committee. Hibur is a voluntary initiative that aims to create a lasting partnership between MIT and Technion by providing a framework that will allow academic, professional, and personal connections to grow between the two institutes.

The previous summer, Madsen got a taste of Technion life when living on campus while doing an internship at IBM in Haifa. Madsen's 2008 summer project with faculty member Dr Eldad Yechiam, a cognitive scientist, capitalizes upon her computer science skills in user interface design for the presentation of information, coupled with Yechiam's very different expertise with adaptive learning models used to characterize individual learners.



In what Madsen describes as "a productive collaborative environment," they are trying to help individuals with Asperger's syndrome (a disorder on the autism spectrum) by developing a computer game that mimics aspects of the Iowa Gambling Task, a psychological task thought to simulate real-life decision making. People with Asperger's have social impediments, limited abstract reasoning, and difficulties in making strategy-based decisions. Madsen believes that practice with strategic decision-making when playing the game will transfer to real life. The game, now developed, is being tested at Technion – initially with "neurotypical" students and later with an Asperger's population. Depending on the results, testing may continue at MIT.

Yechiam said that the experience with Mish has been exhilarating, with her taking initiatives at every step, and being the "glue" that unified a team of students. "The main idea of the project is to devise a decision-making trainer that will have the potential to help a clinical population of adolescents who face dire difficulties in their social decisions. Mish felt very strong commitment towards the possibility of using computer technology to help individuals with autism, and has offered her help in continuing to work and develop the program while back at MIT," he said.

Madsen is well satisfied with her experience here and has enjoyed her work with Technion students whom she describes as being more forthright than their U.S. counterparts. "This," she says, "is most beneficial to my project in social communication as part of the Affective Communications Group," at the world-famous MIT Media Lab, whose motto is "Inventing a Better Future." The goal of that project is to develop a fun, straightforward application for real-time use to help autistic adolescents become more comfortable with the role of facial expressions in social situations. This is achieved with the help of a novel technology using live computer-assisted video analysis.

After completing her fourth year at MIT, Madsen intends to earn a master's degree in computer science or medical engineering before entering medical school. "It's definitely possible that I'll live in Israel some time in the future," she says.