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PRESS RELEASE

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CMU-Q's top research award: detecting flaws in concrete using deep learning

Meeting of the Minds symposium honors student work across disciplines

DOHA, QATAR: Carnegie Mellon University in Qatar (CMU-Q) awarded Fatma Tlili the Best Project award for her research into developing an automated process for detecting cracks and defects in concrete. Tlili was one of more than 50 researchers at the 2018 Meeting of the Minds symposium at CMU-Q.

Tlili, who is a graduating senior from CMU-Q's Computer Science Program, used a combination of image processing and deep learning techniques to identify and map potential cracks using images taken by drones. Gianni Di Caro, associate teaching professor of computer science at CMU-Q, advised Tlili on her project.

Michael Trick, the dean of CMU-Q, said: "At Carnegie Mellon, we often describe our research as 'work that matters' and we investigate questions that will have a real impact on the world. Fatma's work embodies this approach, using deep learning to find a better way to preserve the integrity of buildings, tunnels and bridges."

A panel of expert judges assessed posters, provided feedback to the researchers, and determined the winners of the main awards. Second place went to Mohammad Osaama Bin Shehzad, who used bioinformatics to classify bacterial diversity in ballast water discharged by cargo ships in Qatar. Rounding out the top project awards was a study of road accidents and emergency services in the U.S. by Muhammad Ali Bashir and Umair Qazi. Latifa Khalid Al-Thani was recognized with the Best Poster award for her project to recreate virtually how visitors interact with museum artifacts.

Qatar National Research Fund (QNRF) provided a panel of judges who selected projects in each of the areas of biological sciences, computer science and information systems. The senior program manager for ICT at QNRF, Dr. Munir Tag, presented the awards: "It was very difficult to make these selections, because these were all great projects from great students. QNRF is very proud to support these young researchers."

Dr. Barak Yehya, on behalf of the Ministry of Development Planning and Statistics, honored five projects that contributed to Qatar's future. "These five projects were judged on how aligned they are with the second National Development Strategy 2018-2022 of Qatar. All of the projects here today showed very valuable research, and all the students involved should be proud," said Dr. Yehya.

The expert judges represent organizations from across Qatar, including: Education Above All Foundation, Hamad Bin Khalifa University, Hamad Medical Corporation's National Center for Cancer Care and Research, Ministry of Development Planning and Statistics, Qatar Computing Research Institute, Qatar Environment and Energy Research Institute, Qatar Mobility Innovations Center, Qatar National Research Fund, Qatar University, Sidra Medicine, VCUarts Qatar, and Weill Cornell Medicine – Qatar. Faculty members from CMU-Q also lent their expertise.

The first Meeting of the Minds was held in 1995 at Carnegie Mellon University's Pittsburgh campus as a showcase of student research to a wide audience. The Qatar campus has held its own Meeting of the Minds annually since 2007.

Meeting of the Minds award winners

Best Project

1. Fatma Tlili, "Deep learning and pattern analysis for crack detection". Advisor: Gianni Di Caro
2. Mohammad Osaama Bin Shehzad, "Classification of bacterial diversity in Qatar ballast water samples using QIIME bioinformatics pipeline". Advisor: Annette Vincent, Basem Shomar, Qatar Environment and Energy Research Institute
3. Muhammad Ali Bashir, Umair Qazi, "RAES: Road accidents and emergency services in the United States". Advisor: Chadi Aoun

Best Poster

Latifa Khalid Al-Thani, "Communicate through your eyes: A study of natural interactions with a digital cultural artifact". Advisor: Divakaran Liginlal

QNRF Awards

Biological Sciences: Boshra Al-Sulaiti, Reem Elasad and Ettaib El Marabti, "A novel post-transcriptional mechanism for inhibiting the expression of PTEN in breast cancer." Advisor: Ihab Younis

Computer Science: Rohith Krishnan Pillai, "Mixed initiative system for survivable path planning in cluttered environments." Advisor: Gianni Di Caro

Information Systems: Ali Abbas, "Doctor-patient communication in Qatar." Advisor: Selma Limam Mansar

Ministry of Development Planning and Statistics Awards

Boshra Al-Sulaiti, Reem Elasad and Ettaib El Marabti, "A novel post-transcriptional mechanism for inhibiting the expression of PTEN in breast cancer." Advisor: Ihab Younis

AlReem Johar, "Life bacterial detection using RNA extraction from ballast water sample." Advisor: Annette Vincent

Aya Nour and Fatema Abdul Salik, "Testing for the presence of genetic modifications in common corn products — tortilla chips and corn flour." Advisor: Annette Vincent

Mohammed Zakaria, "Measuring corporate transparency in sustainability reporting: A study of the energy sector." Advisors: Divakaran Liginlal, Chadi Aoun

Postgraduate: Ossama Obeid, Salam Khalifa, Nizar Habash, Houda Bouamor, Wajdi Zaghouani, Kemal Oflazer, “MADARi: A web interface for joint Arabic morphological annotation and spelling correction.”

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About Carnegie Mellon University in Qatar
For more than a century, Carnegie Mellon University has challenged the curious and passionate to imagine and deliver work that matters. A private, top-ranked and global university, Carnegie Mellon sets its own course with programs that inspire creativity and collaboration.

In 2004, Carnegie Mellon and Qatar Foundation began a partnership to deliver select programs that will contribute to the long-term development of Qatar. Today, Carnegie Mellon Qatar offers undergraduate programs in biological sciences, business administration, computational biology, computer science, and information systems. Nearly 400 students from 35 countries call Carnegie Mellon Qatar home.

Graduates from CMU-Q are highly sought-after. Most choose careers in top organizations in Qatar and around the world, and many have pursued graduate studies. With ten graduating classes, the total number of alumni is nearly 700.

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