There is Plenty of Fish in the sea: Challenges in Underwater Computer Vision

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The ocean covers 70% of the earth surface, and influences almost every aspect of our life, such as climate, fuel, security, and food. The EU estimates that its maritime regions account for around 40% of its GDP. All over the world, depleting resources on land are encouraging increased human activity in the ocean, for example: gas drilling, desalination plants, port constructions, aquaculture, fish farming, producing bio-fuel, and more. These expanded activities influence the delicate ecology that is already threatened by global warming and ocean acidification, and present a risk of over-exploitation. The ocean is a complex, vast foreign environment that is hard to explore and therefore much about it is still unknown. Interestingly, only 5% of the ocean floor has been seen so far. As human access to most of the ocean is very limited, most of the operations in it rely on remote sensors and cameras serve as our eyes. However, image quality is very limited because of bad visibility. Thus, it introduces numerous research challenges in visibility enhancement, autonomous surveying and data analysis.

In this talk I will cover some of our recent efforts in underwater computer vision and present open challenges.

Short bio:
Dr. Tali Treibitz is heading the Marine Imaging Lab in the Department for Marine Technologies, Charney School of Marine Sciences, University of Haifa. Previously Dr. Tali Treibitz was a post-doc working with David Kriegman in the Computer Vision group, Computer Science and Engineering department, in the University of California, San Diego and with Jules Jaffe in the Jaffe laboratory for Underwater Imaging in the Scripps Institution of Oceanography.