

## Undergraduate Internship Program – CMU Portugal

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This report is a summary of my work under the Undergraduate Internships Program at Carnegie Mellon University. My sponsors for this program were Professor Mahmoud Tavakoli (ISR – UC) and Professor Carmel Majidi (CMU). My work was developed in the Soft Machines Lab, Mechanical Engineering Department in June, July August 2016.

The goal of my internship was to learn new fabrication methods and also how to use some materials that I do not have access in ISR – such as Liquid Metal - to produce soft and flexible sensors. Furthermore, I worked on a fingerprint tactile sensor to integrate in a prosthetic hand that is being developed in ISR to detect the proximity of an object, the touch and also the slipping.

In SML, I had the opportunity to work with UV laser, CO<sub>2</sub> laser, spin coater, centrifuge, oxygen plasma and a Thin Film Applicator that is essential in order to make sensors with hundreds of micrometers. Additionally, all my colleagues from SML were very welcoming and helped me to integrate either in the city and in the lab, teaching me the best techniques to achieve my goal. Most of them were working in the lab and in this field for a couple years so I could learn a lot from this experience. Furthermore, we had group meetings twice a week, which is good to share the work that we are doing and to listen new ideas that we can use to improve our work but also to learn something about other projects that are running in the same lab.

The CMU campus is amazing and with the CMU ID card I could use all the facilities for free, including a new gymnasium and a swimming pool. However, there are also some outdoor facilities such as soccer and American football field and tennis courts. It is likely to find other international students which is very good to make new friends from all over the world and to learn new cultures.

Regarding the city of Pittsburgh, I really enjoyed it. It is not too small neither too big. Usually all places needed for a daily routine are in a walking distance – grocery stores, restaurants. I always felt safe, even when I had to walk alone at nights.

This was a very enriching experience either in a personal or professional view and I strongly recommend it to everyone.