
UNDERGRADUATE INTERNSHIP PROGRAM - FALL 2015

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This report describes the activities and work developed during my internship at Carnegie Mellon University (CMU), Pittsburgh, which took place from August 21 to November 13, 2015. I worked at the Robotics Institute, more specifically in the Human Sensing Lab, and was hosted by Professor Fernando De la Torre.

During my stay, my work was integrated in the ongoing VR2Market project, which aims to bring wearable health monitoring solutions to first responders and other hazardous professions. While the existing system already possesses various sensing capabilities, it lacks an important physiological measurement, which is core temperature. Core temperature can provide vital insight on current health status of deployed units, but presents the major hurdle of being very difficult to measure through noninvasive approaches. Developed work focused on exploring the relationship between different physiological measurements, which the existing system can measure, and core temperature. Then, using data mining techniques, a system was created to exploit these relationships, using them to predict core temperature values from other sensed measurements. The implemented system looks very promising, yet these were just the first steps on a system that still needs much research and work to be put into it.

Furthermore, I feel that this internship greatly improved my teamwork skills, since I had to meet and discuss my work on a regular basis with my supervisor and with other members of the lab. Moreover, the fact that I was integrated on a very diverse group where everybody had a different knowledge background, proved to be extremely enriching as it let me obtain very distinct, critical and valuable feedback. While I learnt a lot from many interesting areas from all my group colleagues, I would personally like to thank Dustin Axman, a PhD student integrated in the Human Sensing Lab who followed my work closely, and who provided me the necessary feedback to overcome the barriers I was presented throughout my work.

During this internship, I also had the opportunity to attend various seminars given by distinct lecturers, which presented me with a different insight on the field of computer science. Aside from the academic experience, this internship was a truly enriching experience as it gave me the opportunity to live in the very distinct, yet interesting culture which is the American culture. While at Pittsburgh, I managed to see various of the city's attractions, namely some of the numerous museums the city has to offer. I also had the chance to live the American sports experience up close, by following Pittsburgh's football, baseball and ice hockey teams.

Overall, this internship was an unique and enriching experience, which greatly contributed to my academic and personal growth. I cannot stress enough how important this opportunity can be, but I hope this report encourages others to enroll in this program and to reap its huge benefits.

I would like to end by leaving my special thanks to Fundação para a Ciência e Tecnologia (Portuguese Foundation for Science and Technology) and CMU Portugal for making this program possible. I would also like to extend my thanks to Professor Fernando De la Torre for his guidance at CMU and to Professor João Paulo Cunha for his guidance from Portugal, to Professor João Claro for letting me know of the existence of this program, and, finally, to all of the CMU Portugal staff for all the help and availability provided since preparation until the end of the program.