

Advanced Computing Training Program

Final Report

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Thanks to my participation in the Advanced Computing Training Program, I had the chance to understand the logistics and functioning of a supercomputing center. During my two and a half months stay, I was part of a multidisciplinary research team within the Women's Health Research Program. The team included researchers from the Texas Advanced Computing Center (TACC) and Dell Medical School. The research work developed by this group targets a more personalized and precise medicine for women. More specifically, they work towards early diagnosis and interventions, as well as risk prediction for pregnant women.

My overall task throughout the program was to conduct a preliminary study on the feasibility of predicting postpartum depression, based on social media posts published by recent mothers. In this sense, I collected public, anonymized social media posts and applied machine-learning algorithms for classifying postpartum depression. This preliminary study led to a publication submitted to the Medical Informatics Europe conference, currently under review. This publication is co-authored by PhDs Dave Semeraro and Justin Drake, researchers at TACC and Radek Bukowski, MD, PhD at Dell Medical School.

Besides working on the aforementioned project, I was able to take three one-week TACC summer institutes: Essentials of Advanced Computing, Science in the cloud and Machine Learning and *Frontera*. These institutes gave me the opportunity to dive deeper into the concepts, research tools and methodologies used at TACC and to have a broader understanding of the way TACC organizes its research groups and interests.

Having returned to Portugal, I expect to continue working on the topic of digital phenotyping based on social media activity, as an enabler for disease prevention and early interventions. The experience at TACC/Dell Medical School improved my understanding of good research practices and opened a door for possible future collaborations. My overall experience was very positive, and I hope I can uncover more of the work done through the publication of the above-mentioned article.