**Thesis Charles Jabour**

Most coronary artery disease is caused by stenosis, a narrowing of the coronary arteries. The diagnosis usually neglects the coronary microcirculation, which is described by its resistance and flow reserve (CFR). In this work, we analyzed the microvasculature of the eye to estimate that of the heart. We used the COREYE database, which combines measurements of coronary data with 124 images of retinal perfusion and choriocapillaris obtained by OCT-A. We selected the best descriptors for our different prediction tasks. We classified resistances and CFR into high and low values based on ocular and demographic descriptors. Our research highlighted the importance of flow voids. Specifically, their number was associated with the detection of reduced CFR. These results tend to show that it is possible to estimate coronary resistance and reserve by ophthalmic analysis.