Computer vision is an inter-disciplinary topic crossing boundaries between computer science, statistics, mathematics, engineering and cognitive science. Its research involves the development and evaluation of computational methods for image analysis. This includes the design of new theoretical models and algorithms, and practical implementation of these algorithms using a variety of computer architectures and programming languages. The methods under consideration are often motivated by generative mathematical models of the world and the imaging process. Recent approaches also rely heavily on machine learning techniques and discriminative models such as deep neural networks.

The focus of the program will be on problems that involve modeling, machine learning and optimization. The program will also bridge a gap between theoretical approaches and practical algorithms, involving researchers with a variety of backgrounds.