

# Computational Topology: Foundations, Algorithms, and Applications

## Special Session A27

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“Computational Topology: Foundations, Algorithms, and Applications” is a special session scheduled for July 23-24 within the 2nd edition of the “AMS-UMI International Joint Meeting”.

Computational topology is by now a well-established field at the crossover of topology and computational geometry. It aims to transfer the power of topology for qualitative analysis to the setting of discrete approximations. Because finite data sets may be sampled from continuous underlying objects, computational topology involves not only discrete objects (such as pixelized images or finite meshes) but also an analysis of the transition between continuous and discrete. The development of this field has followed three distinct, but tightly intertwined directions: the investigation of the mathematical foundations of the subject, the quest for creating higher-performance algorithms, and the paths for new applications that those tools have opened.

The goal of this special session is two-fold. On the one hand, we want to valorize those three directions for their own importance. On the other hand, we intend to bring together well-established researchers and early-career mathematicians, enhancing the exchange of ideas and promoting collaborations between different communities.

For more information visit the following webpage:

<https://sites.google.com/view/ams-umi-computationaltopology/home-page>.