

# Intelligent Multimedia Data Hiding: Techniques and Applications

## **Abstract:**

Digital music, podcasts, live and recorded webinars, video calls, and streaming video have changed the way in which we communicate, and have become ubiquitous in virtually every organization. We employ these methods to convey ideas, train our employees, engage our customers, and of course entertain.

The question is, does digital multimedia pose a threat? Could these channels be used to communicate information covertly, ex-filtrate intellectual property, share insider information, be used to convey command and control information, or provide the needed enabling technology for advanced persistent threats? Additionally, since the size of multimedia files are typically much larger than a single digital photo, does this mean that larger payloads of hidden information could be exchanged or leaked by exploiting weaknesses inherent in multimedia carriers? Or, on the contrary, is the human auditory system sensitive to even small changes in multimedia information such that we could detect anomalies caused by embedding hidden information in such streams?

In this talk, we present the intelligent multimedia data hiding techniques and their possible application. We will cover some of the earliest and simplest forms of data hiding in digital multimedia and then move to some of the latest innovations in order to provide insight into these questions. Some of the research branches, called reversible data hiding, is also depicted.