UNIVERSIDAD COMPLUTENSE MADRID

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Systems Theory Approach to Video Streaming

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Entrada libre hasta completar el aforo

Resumen:

A cornerstone of our digital society stems from the explosive growth of multimedia traffic in general and video in particular. Video already accounts for over 50% of the internet traffic today and mobile video traffic is expected to grow by a factor of more than 20 in the next five years. This massive volume of data has resulted in a strong demand for implementing highly efficient approaches for video transmission. Error correcting codes for reliable communication have been studied for several decades. However, ideal coding techniques for video streaming are fundamentally different from the classical error correction codes. In order to be optimized they must operate under lowlatency, sequential encoding and decoding constrains, and as such they must inherently have a convolutional structure. Such unique constrains lead to fascinating new open problems in the design of error correction codes. In this talk we aim to look from a system theoretical perspective at these problems. In particular we propose the use of convolutional codes.

Sobre Diego Napp:

Diego Napp carried out his PhD at the University of Groningen (The Netherlands, 2008). His research interests lie in the intersection of the broad areas of Systems & control theory, Algebra and Coding theory. After a post-doc in Portugal and a Juan de la Cierva fellowship in Valladolid, he is currently holding a "FCT researcher" position (analogous to Ramon y Cajal) at the University of Aveiro in Portugal. In the last few years he has focused on convolutional codes which are basicaly linear systems over finite fields. In 2012, he was a visiting researcher in the Department of Mathematics of the Universities of Notre Dame (US) and Melbourne (Australia). He has giving invited talks at the he Departments of Mathematics of the Universities of British Columbia (Canada), Zurich (Switzerland), Notre Dame (US), Melbourne (Australia), Javeriana de Cali (Colombia) among many others. He has over 20 high quality publications in the different areas of applied mathematics, electrical engineer and coding theory.