

Translating Signal Processing Theory Into Applications

Prof. Gaurav Sharma

Electrical and Computer Engineering Department, University of Rochester

Abstract

In this talk, through a series of case studies, we demonstrate how concepts learned in common signal processing courses can be effectively applied to a wide variety of problems encountered in practical applications. The case studies, drawn from our research over the years, span diverse application areas including: color and digital imaging, image restoration, communications, media security, watermarking, and bioinformatics. The talk will also illustrate several connections between problems in these very different areas in order to highlight not only the versatility of signal processing tools and techniques but also the synergies that come about from exploring a broad class of applications. Solutions presented highlight both simple and complex; obvious and non-obvious; direct and indirect; and small and large scale applications for signal processing tools. We hope these examples will inspire students to develop their own innovative signal processing solutions for problems they encounter.