University of Pavia

Ph.D. School of Electrical and Electronics Engineering and Computer Science

SEMINAR

Document analysis of historical manuscripts: the analysis of Antonio Stradivari's relics

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Via Ferrata 5, Pavia

Abstract: The study of historical documents is an important research branch of document analysis. This kind of manuscripts is particularly difficult to analyze, since, in many cases, they were altered by time or by wrong conservation conditions, and can show faded, ruined or even missing writings. Several works are described in literature, mainly dealing with two main problems: (i) the digitalization of the documents, using OCR techniques; (ii) the stylistic analysis of handwriting, for example for indexing or attribution. In this seminar, after an overview of the main image processing techniques adopted in this field, the results achieved by the handwriting analysis conducted on Antonio Stradivari's relics will be described. This collection, currently held in "Museo del Violino" in Cremona (Italy), is composed by a series of technical drawings, artifacts, and wood molds, used by the famous violin maker between 17th - 18th century, that contains his working notes. This data set is very complex, it contains only short writings (few words or text lines), faded or damaged areas, different supports (wood or paper), and multiple annotations added by the owners of this collection during the centuries. This case study is representative of a lot of the problems that can affect ancient manuscripts, thus it is a good example to discuss the possibilities and the limitations of the current techniques.

Bio: Piercarlo Dondi received the PhD in Electronics, Computer Science and Electrical Engineering from University of Pavia in 2012, with a thesis entitled "Multichannel Integration for Real-Time Multimedia Applications". From 2012 to 2014 he worked on different collaborations between companies and laboratories of University of Pavia. Since 2014 he carries out scientific research at "Centro Interdipartimentale di Studi e Ricerche per la Conservazione del Patrimonio Culturale" (CISRiC) of University of Pavia. His main research topics involve image processing and 3D modeling of artworks (in particular string musical instruments) and human-computer interaction applied to cultural heritage.

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