

C. Jackowski
Institute of Forensic Medicine
C. Cattaneo
Università degli Studi di Milano

July 1, 2019

Re: Submission to Forensic Science International

Dear Professor Jackowski and Professor Cattaneo,

Please find attached a manuscript, "A Convolutional Neural Network for Outsole Recognition" intended for submission to FSI.

The manuscript describes a computer vision algorithm which automates the recognition of geometric shapes in images of shoe outsoles. This algorithm uses a scheme similar to that used by footwear forensic analysts, unlike other convolutional neural network based analyses in footwear forensics. We describe the model's structure, capabilities, and overall performance; we also explore situations where the model's automatic recognition process does not succeed and provide some possible solutions for these issues going forward. We believe this work lays the foundation to bridge the gap between theoretical applications of computer vision in footwear forensics and work that is done in the crime lab.

We hope that you find the manuscript acceptable for publication in FSI. If there is any additional information we can provide, please feel free to contact us directly.

Sincerely,



Miranda Tilton and Susan Vanderplas
Center for Statistics and Applications in Forensic Evidence
Iowa State University