

**SPECIAL ISSUE ON PERCEPTUAL DEEP LEARNING  
IN COMPUTER VISION AND ITS APPLICATION**

**PREFACE**



Artificial intelligence (AI) gives computers the ability to see what is happening in the world around them. Recent developments have led to the widespread use of deep learning (DL) based on image sensors. DL has become a highly successful method employed in imaging and computer vision (CV). Although the existing technology has matured, its performance is still affected by various environmental conditions, and recent methods have attempted to fuse DL techniques with conventional methods to guarantee higher accuracy. The goal of this Special Issue is to highlight state-of-the-art works that deal with the use of DL for CV. We called for the presentation of technological advances and research results in the fields of digital application in daily life.

For this Special Issue of *Sensors and Materials*, which is on “Perceptual Deep Learning in Computer Vision and its Application,” we solicited high-quality research results from all related fields. It focuses on state-of-the-art CV technology to create the potential chance for the improvement of consumer electronics service. All the papers were written by researchers working in CV-related fields. In fact, the editorial office of *Sensors and Materials* and I have collected works on the current practice and the state of research in this topic with a DL or machine learning (ML) background in CV. This Special Issue contains eight papers categorized into nighttime pedestrian detection, optimizing parameters method, aircraft shape design, dental shade matching, voice recognition & marking, vein recognition system, face skincare system, and facial emotion recognition. The first three papers are related to advanced applications, not only ML but also DL, that greatly affect the performance of sensors in CV. The next five papers focus on CV in biometric information systems.

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