Library

FAQs on Open Access

Why open access?

Open Access benefits everyone. It allows research outputs of all kinds to be disseminated as broadly as possible. Creators can select and apply an appropriate licence for a range of uses which may allow users to read, download, print, link, distribute, re-use and re-remix the content for any lawful purpose – whilst creators retain the right to be properly attributed.

This fosters higher views, citation rates, and impact.

What do I need to do?

All research publications created by UTS staff and students must be deposited to OPUS (UTS's open access digital repository) via Symplectic Elements. For all journal articles and conference papers with a DOI, you need to upload the accepted manuscript version. For all other publications upload the published version.

Refer to Table 4.4 of the UTS Research Open Access Procedure for examples of other research output types and where they should be submitted.

What is an 'accepted manuscript'?

This is the accepted and amended version of a paper, following peer-review. It has been accepted by the publisher, but they are yet to add their formatting or typesetting. See page 2 for an example.

How do I add outputs to the UTS open access digital repository? (OPUS)

Upload your outputs into Symplectic Elements, from there they will flow to the UTS digital repository – OPUS. Refer to OPUS: How to deposit for further guidance.

What about funders' open access requirements?

Funders are increasingly requiring that the research they fund must be openly accessible. The ARC and NHMRC each have policies stating that all publications resulting from projects they have funded must be publicly accessible; and encourage open access to data wherever possible. Refer to funder guidelines for full details.

What if my output is under embargo?

All papers submitted to Symplectic Elements flow to OPUS, where they will be reviewed by UTS Library for copyright compliance. If the paper is under embargo the metadata will still be accessible, but access to the full text will be restricted until the embargo period ends.

Who can help me with this?

UTS Library provides support with strategic publishing (pathways to open access, read and publish agreements, predatory publishers); copyright and licensing (publisher agreements, rights retention, creative commons); and OPUS. Contact UTS Library.

UTS Open Access Policy ↗

UTS Research Open Access Procedure ↗

Library

Accepted Manuscript Guide

Which version of my paper is the ‘accepted manuscript’?

What does it look like?

Development of a refined illumination and reflectance approach for optimal construction site interior image enhancement

Abstract:

Purpose - Images taken from construction site interiors often suffer from low illumination and poor natural colors, which restricts their application for high-level site management purposes. The state-of-the-art low-light image enhancement (LIME) method provides promising image enhancement results. However, they generally require a longer execution time to complete the enhancement. This study aims to develop a refined image enhancement approach to improve execution efficiency and performance accuracy.

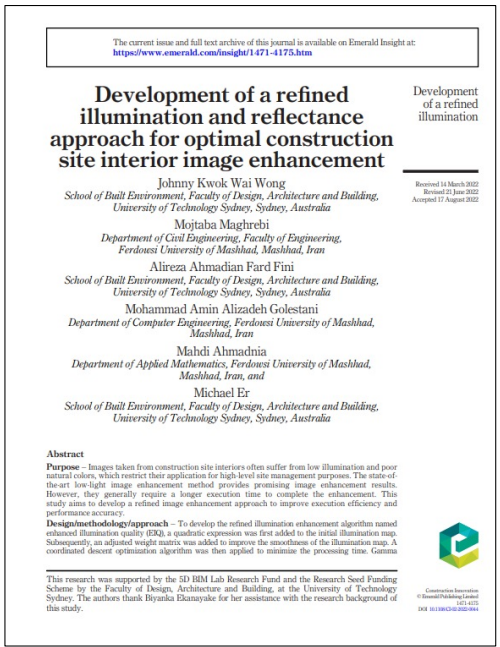
Design/methodology/approach - To develop the refined illumination enhancement algorithm named enhanced illumination quality (EIQ), a quadratic expression was first added to the initial illumination map. Subsequently, an adjusted weight matrix was added to improve the smoothness of the illumination map. A coordinated descent optimization algorithm was then applied to minimise the processing time. Gamma correction was also applied to further enhance the illumination map. Finally, a frame comparing and averaging method was used to identify interior site progress.

Findings - The proposed refined approach took around 4.36 to 4.52 seconds to achieve the expected results while outperforming the current LIME method. EIQ demonstrated a lower *lightness-order-error* (*LOE*) and provided higher object resolution in enhanced images. EIQ also has a higher *structural similarity index* (*SSIM*) and *peak-signal-to-noise ratio* (*PSNR*), which indicated better image reconstruction performance.

Originality - The proposed approach provides an alternative to shorten the execution time, improve equalization of the illumination map and provide a better image reconstruction. The approach could be applied to low-light video enhancement tasks and other dark or poor jobsite images for object detection processes.

Keywords: Enhanced image quality; Low-light image enhancement; Indoor; Photogrammetry; Illumination map; Construction site

ACCEPTED MANUSCRIPT
(Final author version)
Usually can be open access



The current issue and full text archive of this journal is available on Emerald Insight at:
https://www.emerald.com/insight/1471-4175.htm

Development of a refined illumination and reflectance approach for optimal construction site interior image enhancement

Development of a refined illumination

Johnny Kwok Wai Wong
School of Built Environment, Faculty of Design, Architecture and Building, University of Technology Sydney, Sydney, Australia

Mojtaba Maghrebi
Department of Civil Engineering, Faculty of Engineering, Ferdowsi University of Mashhad, Mashhad, Iran

Alireza Ahmadian Fard Fini
School of Built Environment, Faculty of Design, Architecture and Building, University of Technology Sydney, Sydney, Australia

Mohammad Amin Alizadeh Golestani
Department of Computer Engineering, Ferdowsi University of Mashhad, Mashhad, Iran

Mahdi Ahmadnia
Department of Applied Mathematics, Ferdowsi University of Mashhad, Mashhad, Iran, and

Michael Er
School of Built Environment, Faculty of Design, Architecture and Building, University of Technology Sydney, Sydney, Australia

Received 14 March 2022
Revised 21 June 2022
Accepted 17 August 2022

Abstract

Purpose – Images taken from construction site interiors often suffer from low illumination and poor natural colors, which restrict their application for high-level site management purposes. The state-of-the-art low-light image enhancement method provides promising image enhancement results. However, they generally require a longer execution time to complete the enhancement. This study aims to develop a refined image enhancement approach to improve execution efficiency and performance accuracy.

Design/methodology/approach – To develop the refined illumination enhancement algorithm named enhanced illumination quality (EIQ), a quadratic expression was first added to the initial illumination map. Subsequently, an adjusted weight matrix was added to improve the smoothness of the illumination map. A coordinated descent optimization algorithm was then applied to minimise the processing time. Gamma

This research was supported by the 5D BIM Lab Research Fund and the Research Seed Funding Scheme by the Faculty of Design, Architecture and Building, at the University of Technology Sydney. The authors thank Biyanka Ekanayake for her assistance with the research background of this study.

Construction Innovation
© Emerald Publishing Limited
1471-4175
DOI 10.1108/CI-06-2022-0164

PUBLISHER’S VERSION
Usually can’t be open access