

Introduction to Image Processing

Prof. Alexandre Zaghetto
alexandre.zaghetto@mcgill.ca

McGill University
Department of Electrical and Computer Engineering

Topic 00 – Course Overview

1. Why Image Processing?

- Applications are becoming more frequent and relevant each day.

2. Objective

- Upon successful completion of the course, you will be able to:
 1. analyze, propose and implement low level image processing algorithms; and
 2. carry out more advanced studies in higher level image processing topics.

3. List of Topics

1. Introduction
2. Digital Image Fundamentals
3. Intensity Transformation and Spatial Filtering
4. Filtering in the Frequency Domain
5. Morphological Image processing
6. Image Segmentation
7. Image Transforms
8. Image coding
9. Video coding
10. Image processing tools
11. Applications

4. Grade Distribution

3 Programming assignments 30% (individual)

1) Digital Image Fundamentals, Intensity Transformation and Spatial Filtering

2) Filtering in the Frequency Domain, Morphological Image processing

3) Image Segmentation, Image Transforms, Image Coding

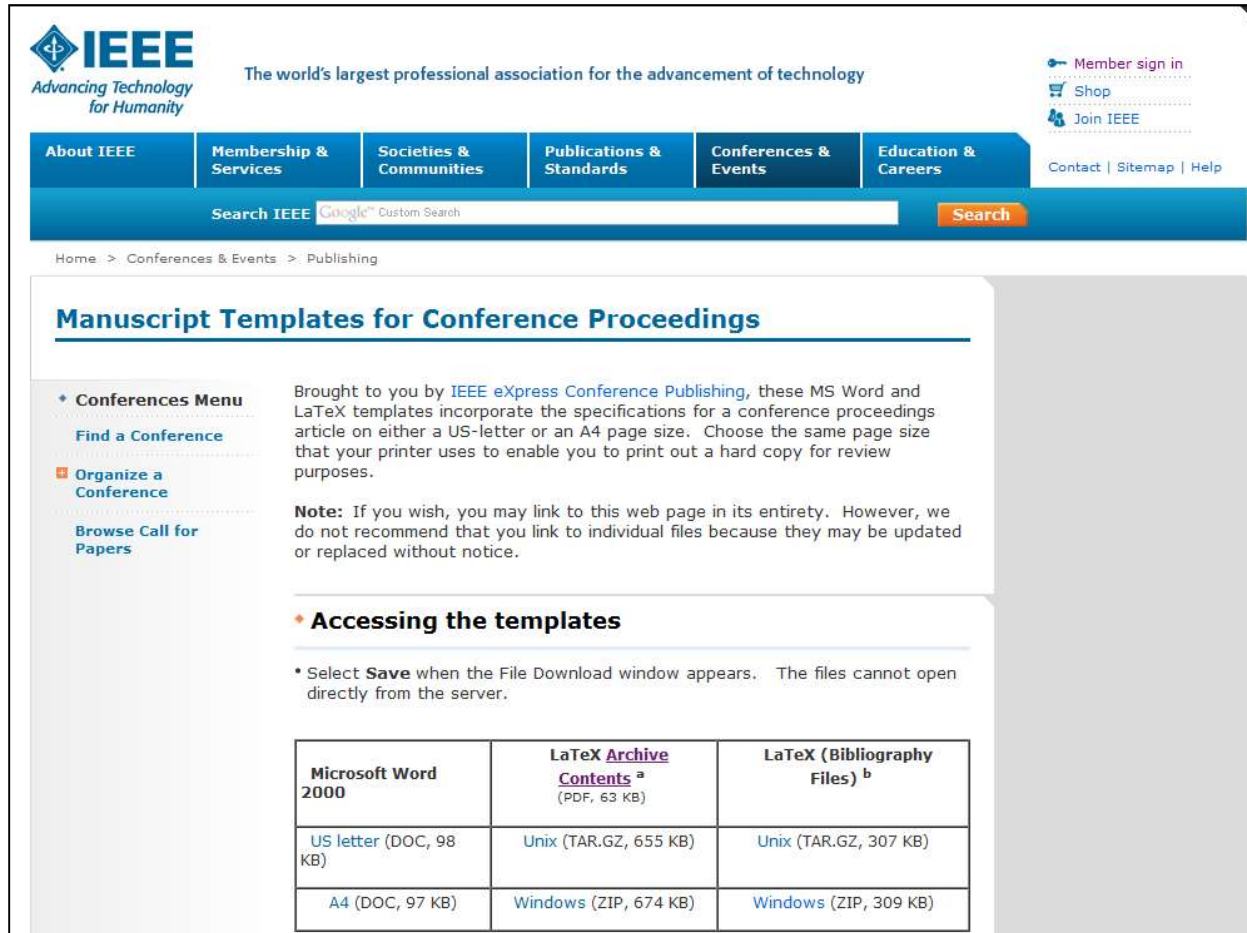
1 Midterm exam 20%

After Morphological Image Processing.

1 Final project 50% (group of two students)

Defined until Lecture 4.

5. Final Project Report



IEEE
Advancing Technology
for Humanity

The world's largest professional association for the advancement of technology

Member sign in
Shop
Join IEEE

About IEEE | Membership & Services | Societies & Communities | Publications & Standards | Conferences & Events | Education & Careers | Contact | Sitemap | Help

Search IEEE Google Custom Search Search

Home > Conferences & Events > Publishing

Manuscript Templates for Conference Proceedings

♦ **Conferences Menu**

- Find a Conference
- Organize a Conference
- Browse Call for Papers

Brought to you by IEEE eXpress Conference Publishing, these MS Word and LaTeX templates incorporate the specifications for a conference proceedings article on either a US-letter or an A4 page size. Choose the same page size that your printer uses to enable you to print out a hard copy for review purposes.

Note: If you wish, you may link to this web page in its entirety. However, we do not recommend that you link to individual files because they may be updated or replaced without notice.

♦ **Accessing the templates**

* Select **Save** when the File Download window appears. The files cannot open directly from the server.

Microsoft Word 2000	LaTeX Archive Contents ^a (PDF, 63 KB)	LaTeX (Bibliography Files) ^b
US letter (DOC, 98 KB)	Unix (TAR.GZ, 655 KB)	Unix (TAR.GZ, 307 KB)
A4 (DOC, 97 KB)	Windows (ZIP, 674 KB)	Windows (ZIP, 309 KB)

http://www.ieee.org/conferences_events/conferences/publishing/templates.html

5. Final Project Report

Abstract

1. Introduction
2. Background and Related Work
3. Proposed Solution
4. Experimental Results
5. Conclusion

6. Office Hours

Office hours: Fridays, 14:00pm – 16:00pm

Office hours location: McConell, TSP Laboratory (734)

6. Slides, Assignments, Codes and Project

- Will be available on:

<https://github.com/zaghetto/ImageProcessing>

7. Tools

- OpenCV (Open Source Computer Vision Library):
 - Is released under a BSD license.
 - It has C++, C, Python and Java interfaces and supports Windows, Linux, Mac OS, iOS and Android.
 - Focus on real-time applications. Written in optimized C/C++
- MATLAB

8. Textbook (not mandatory)

Digital Image Processing, 3rd Edition. Authors: Rafael C. Gonzalez and Richard E. Woods. ISBN-13: 978-0131687288

