# Image Processing

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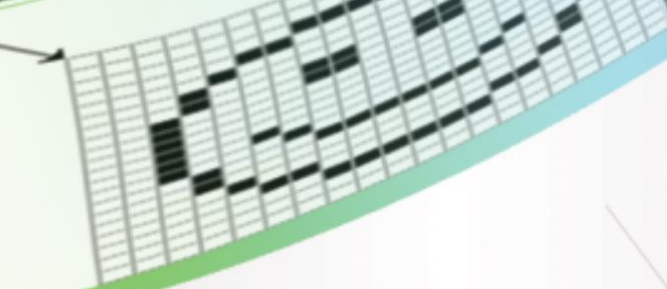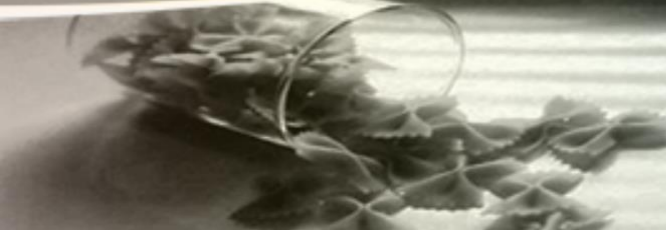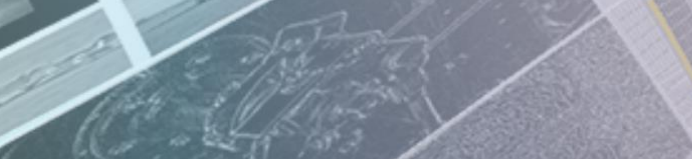
# Self introduction

❑ Background and contact information

## Background

- 2001-2004: Boeung Trabek High School
- 2004-2010: Bachelor's degree in Computer Science at GIC, ITC
  - 2004-2007: Technician's degree (DUT)
  - 2007-2010: Bachelor's degree (Engineer)
- 2010-2012: Master's degree in Computer Engineering at Chung-Ang University (CAU), Seoul, South Korea
- 2017-2021: Doctoral degree in Computer Engineering at University of Mons, Belgium

## Contact

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# Outline

- Introduction to course description

- Outcomes and objectives of the course

- Overall lectures

- Required knowledge

- Assessment methods

# Course Description

- The course of "Image Processing" aims to

  ✓ Introduce students a basic understanding of data structure and color of images

  ✓ Learn concepts of lossless compression

  ✓ Understand about how to segment image and how effect from luminance

- Image Processing course is an image-based concept with the
  - operation, edition, and implementation for making an ideal objective

# Objectives

- Provide a set of **basic skills**, **concepts** and **implementation** for

  - **Image acquisition**

  - **Image operation**

- To give knowledge and experience about

  - **Color channel** conversion

  - **Edge detection** algorithm and implementation

  - **Histogram equalization** algorithm and implementation

# Outcomes

- Students will be able to
  - ✓ Explain on data structure of image
  - ✓ Describe about color channel differences
  - ✓ Understand about lossless compression methods
  - ✓ Be able to segment images in different ways
  - ✓ Explain the effect of luminance
  - ✓ Implement some operations (color changes, histogram equalization)

# Lecture overview

# Teaching methods

❑   Activity

▪ Lecture

▪ Homework

▪ Assignment/Project

▪ Quiz

▪ Mid-term exam

▪ Final exam

# Scoring method

❑ Activities

▪ Attendance                          = 10%

▪ Class activity participation = 15%

▪ Homework/Assignment     = 15%

▪ Assessment                   = 60%

- ▪ Quiz/Project = 20%
- ▪ Mid-term exam = 20%
- ▪ Final exam = 20%

▪ **<u>Remark</u>**: If you are <span style="color:red">absent during a midterm or final exam</span>, you will be considered as fail even the total percentage between midterm and final exam is 40%.

# Class management

❑ Time

- Be on time
- Late case
  - In 15mn:
    - Mark as Late (L)
    - 2L = 1 absence
  - Late > 15mn
    - Allow to get in if students have suitable reasons
    - Mark as Absence (A)
- Microsoft Team
  - For homework, assignment, and project submissions

# Resources

❑ Books and Documents

▪ "Digital Image Processing" par W. K. Pratt, John Wiley & Sons, inc.inc., Third Edition, 2001

▪ "Digital Image Processing" par Gonzalez et Woods, Prentice Hall, Second Edition, 2002

▪ http://homepages.inf.ed.ac.uk/rbf/CVonline/books.htm

▪ http://www.dai.ed.ac.uk/CVonline/transf.htm

# Prerequisite

❑ Prerequisite

- Basic knowledge in software development,
- Graphic design,
- Analysis concepts
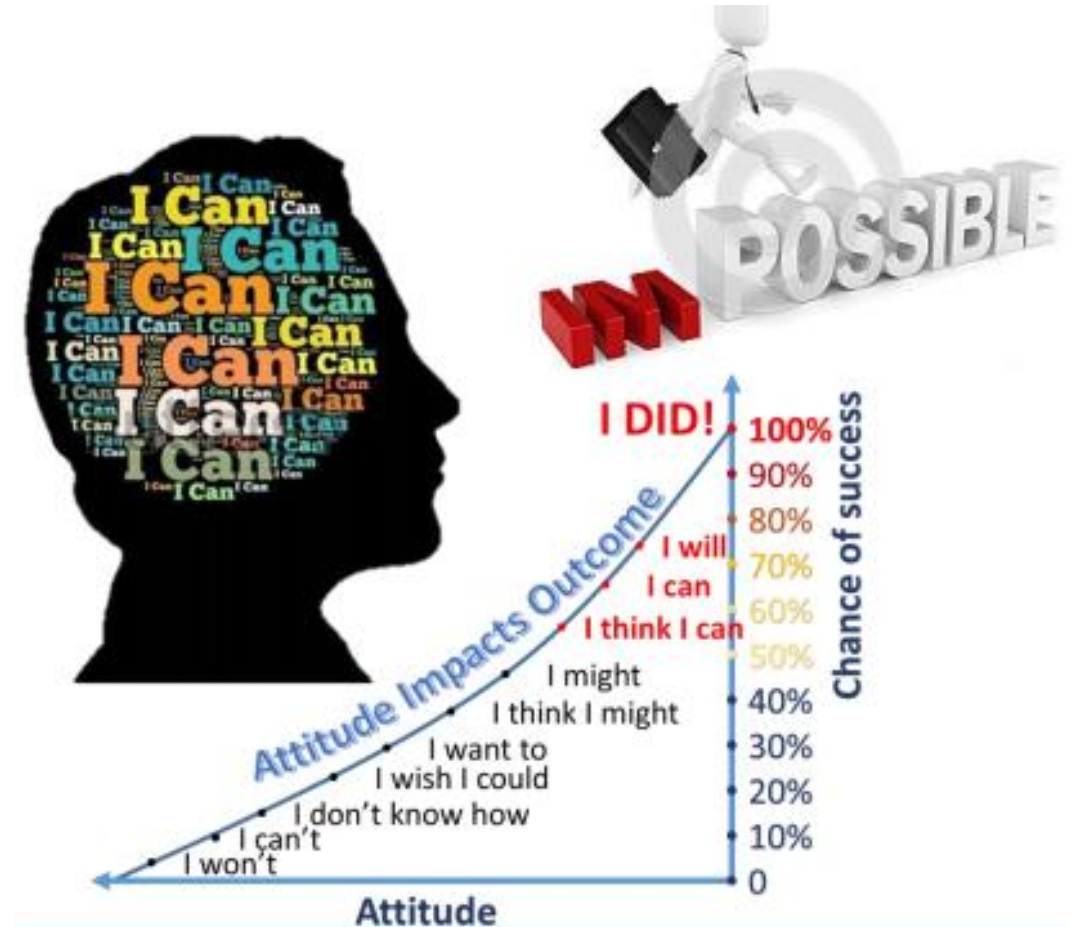
# General Knowledge

- General questions

  1. How do you deal with stress? How do you define stress?

  2. What do you usually do when you are bored? Is it help? Good consequences?

  3. Have you already defined your future goal?

  4. What do you want to become?

  To know about yourself,
  you should be able to answer all of these questions.