# Project Experiences

## 1. Online Marketplace Web Application

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| **Purpose** | To build web application for a start-up that sells *meal-kit online<br>(*meal-kit : pre-portioned and partially-prepared food ingredients to prepare homecooked meals) |
| **Period** | 08/2019 – 12/2019 |
| **Technique** | Python, Django Framework, MySQL, AWS, Git |
| **Role** | ‣ Design database and develop server<br>‣ Develop some parts of main functions for online marketplace – product search, cart, create/delete/modify comment, recipe |
| **Contents** | ‣ **Compositions** : 2-depth category, navigation bar(self-production products, recommended products, bestseller, new products, today's deal, recipe), real-time posts from social media<br>‣ **Functions** : search, cart, pay, create/delete/modify comment |

## 2. Attendance Check Web Application using Face Detection

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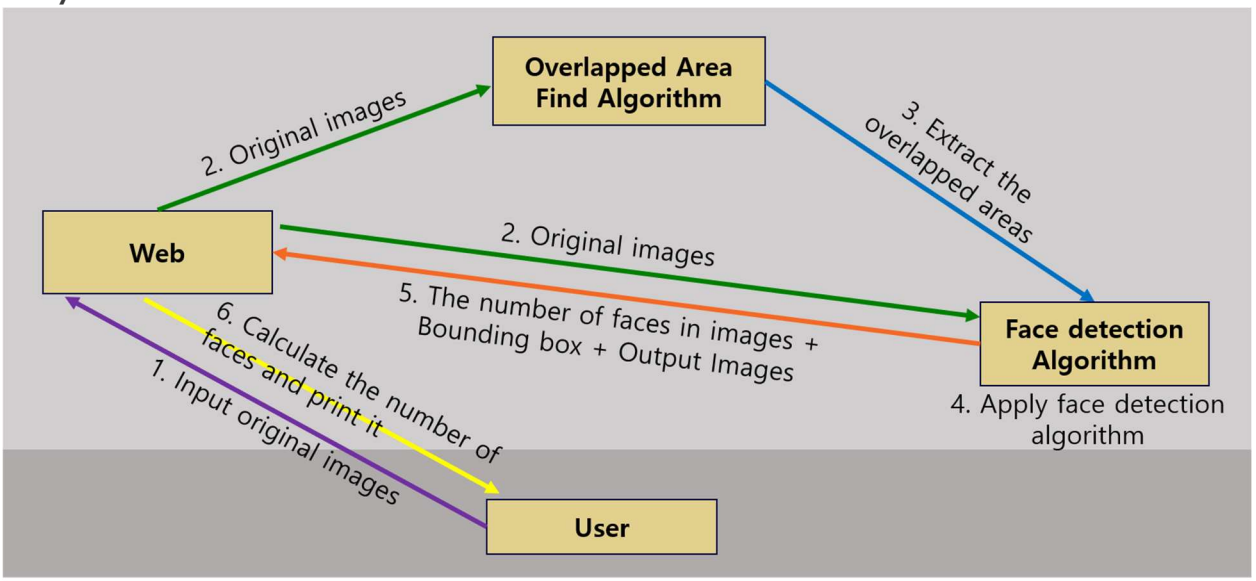
| **Purpose** | To research for the graduation thesis – The secondary verification of attendance to prevent fake attendance |
| **Period** | 04/2019 – 06/2019 |
| **Technique** | Python, Flask Framework, OpenCV, Tensorflow, Numpy |
| **Role** | ‣ Make each programs of image processing and face detecting together<br>‣ Develop web server<br>‣ Design responsive page using Bootstrap |
| **Contents** | ‣ **System Flow** |



**Contents**

- **The way we count the number of faces in input images**


- **Algoritms**
  - FAST(Features from Accelerated Segment Test) : compare the brightness of pixels to find the corner
  - Harris Corner Detection : move the small square over the image and observe if there is a significant change in all directions to find the corner
  - Image Pyramid : make the image in various sizes and choose the corner precisely
  - MTCNN : consists of P-Net, R-Net and O-Net and detect faces
  - NMS(Non Maximum Suppression) : reduce the redundancy

## 3. Arduino Project : Drawbridge

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|---|---|
| **Purpose** | For studying Arduino – implement drawbridge using Arduino |
| **Period** | 04/2016 – 06/2016 |
| **Technique** | Arduino, C, Bluetooth communication |
| **Role** | Make the ship go forward, stop, shift leftwards and shift rightwards |

**Contents**

- **Components** : Uno board, Bluetooth, Infrared distance sensor, Servo motor, DC motor, LED, Photoresistor, Buzzer
- **Structure of drawbridge and ship**