

# 15463 Assignment 5

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## 1 Photometric stereo

### 1.1 Uncalibrated photometric stereo

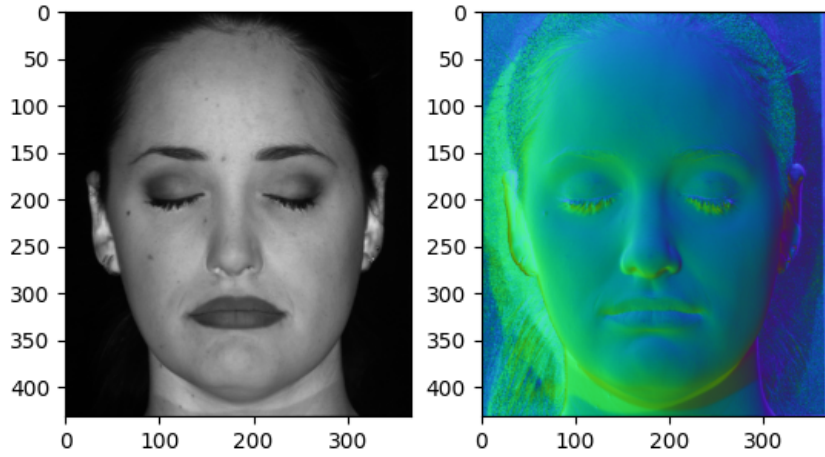


Figure 1:  $\mathbf{A}_e$  and  $\mathbf{N}_e$

where

$$Q = \begin{bmatrix} 1 & 0.5 & 0.5 \\ 0.25 & 1 & 0.25 \\ 0.5 & 0.5 & 1 \end{bmatrix} \quad (1)$$

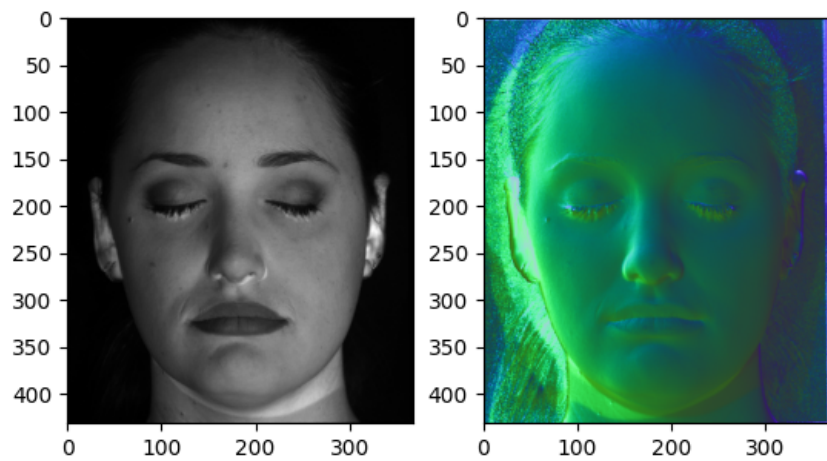


Figure 2:  $A_Q$  and  $N_Q$

## 1.2 Enforcing integrability

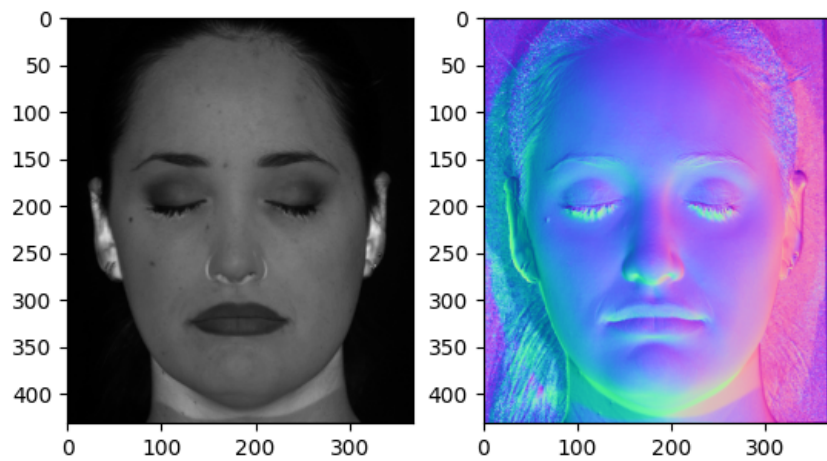


Figure 3:  $A_Q$  and  $N_Q$

### 1.3 Normal integration

### 1.4 calibrated photometric stereo

## 2 Capture and reconstruct your own shapes