Objective: To develop prediction model for combined thermal sensation and acceptance performance

Background:

The most common thermal comfort model / index in standards also showing thermal acceptance in indoor space for building design. Such as the Fanger’s model and adaptive model.

Method(s):

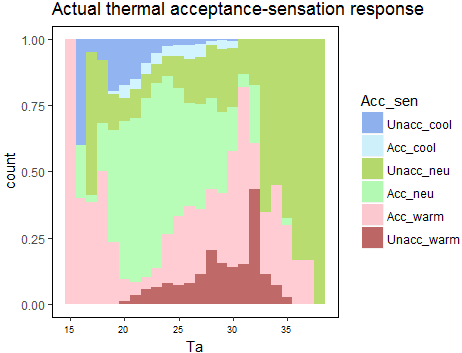
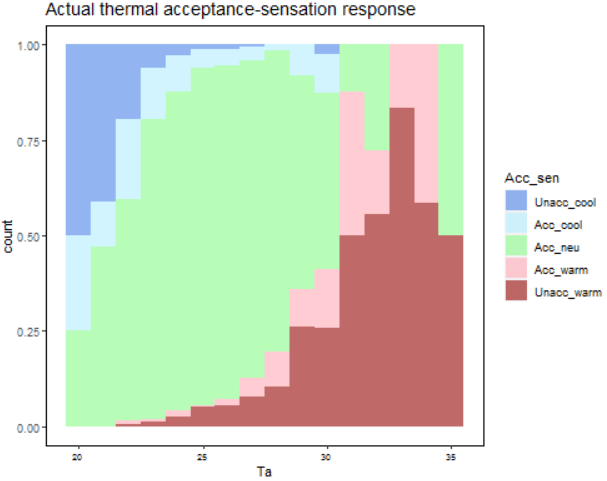
1. Classify thermal acceptance (0: unaccept, 1: accept)
2. Classify thermal sensation (Cool: TSV<-1.5, Neutral: -1.5<= TSV<= 1.5, Warm: TSV>1.5)
3. Combined thermal acceptance and sensation (6 levels)

Acc\_cool, Acc\_neu, Acc\_warm, Unacc\_cool, Unacc\_neu, Unacc\_warm

Findings:

Combined thermal acceptance and sensation against indoor temperature

(Only AC office) (AC office – remove Unacc-neu)

Applying ordinal logistic regression model (plor function) to find out the probability of occurrence in sensation-acceptability level

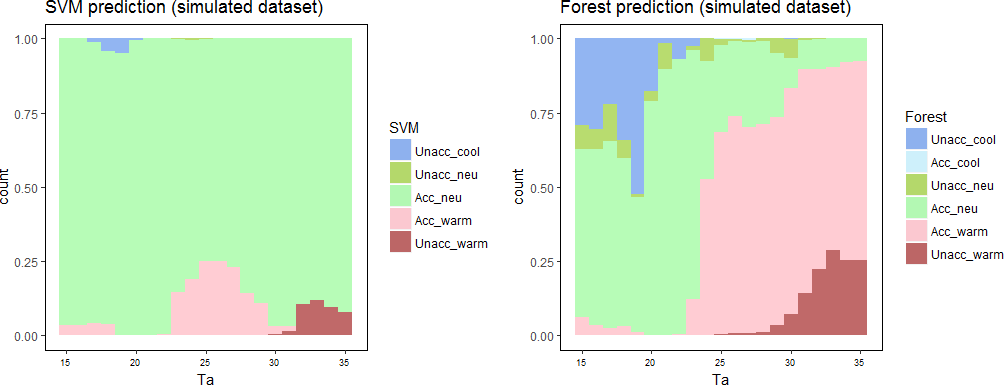
Applications:

Model performance plot against air temperature

**Testing data only**

**Complete dataset: including both training and testing data**

**Simulated dataset (n=10000)**



Simulated dataset (n=10000):

Ta: 15-35 °C

Tr = Ta

To: 5-40 °C

Clo: 0.3-1.1 clo

Met: 1-1.2 met

Rh: 45-85%

V: 0.01-0.2 ms-1