CSE 483

MOBILE ROBOTICS

TAUGHT BY

- prof. madhava Krishna

COURSE TOPICS

1. vision

  - rigid body transformations
  - projective geometry
  - camera modelling
  - camera calibration
  - two-view geometry
  - stereo
  - triangulation
  - resection
  - visual odometry
  - bundle adjustment

2. state estimation

- bayesian filters

- kalman filter

- extended kalman filter

- localization and mapping using EKF.

3. path planning

- AI-style planning

- kinematics

- randomized planning

- trajectory optimization

- collision avoidance in dynamic environments.

TEXTBOOKS

1. multiple view geometry in computer vision; hartley. (2003)

2. probabilistic robotics; thrun. (2005)

2014