

**CE956: Statistical Learning**  
**Department of Computer Engineering**  
**Sharif University of Technology**  
**Spring 2019: Room CE204, Sat. & Mon.: 13:30-15:00**

**Quiz 04 (20 Points) – (April-20-2019)**

Point Processes: (each question 5 points)

1. Briefly, but concisely define a temporal point process? What is a Mark in a temporal point process? In general, is the assumption of mark being independent of the dynamic of the system, valid?
2. In general, the intensity functions are related to density/distribution functions:
  - a. Then, why do we use intensity functions as building blocks of a Temporal Point Process?
  - b. Name 4 popular intensity functions and by example, discuss which ones are suitable for modeling events in a social network.
3. Briefly explain, how do you use Temporal Point Processes along with non-parametric Bayesian models for modeling content diffusion over social media?
4. Briefly explain how NetCode detect communities by using individual activities?