Foreword

I. Expectation Encompasses Probability

Suppose we can compute $\mathrm{E}(\boldsymbol{\phi}(X(t)))$ **for arbitrary function** $\boldsymbol{\phi}(\cdot)$

$$\mathrm{E}(\phi(X(t))) = \mathrm{E}\big(\mathbf{1}_{\{X(t) \leq x\}}\big) = \mathrm{P}(X(t) \leq x)$$

II. Recommended Theoretical Subjects in Networking Field

I. **Optimization Theory** : **Take it (EL3300/SF3849)**. At least Karush-Kuhn-Tucker Condition.

II. Game Theory : Social (Economic) interactions between individuals, based on bargaining/negotiation/compromise and threatening. Yet **not realistic enough**. Controversial to apply it to **lifeless** things (e.g., wireless nodes), which lack ontological willingness to survive and prosper.

III. **Palm Calculus** : Provides crucial insights and viewpoints (e.g., Feller's Paradox). Broadly applicable particularly for **measurement study** and **throughput analysis**. Help deepen your grips on queuing theory and point process theory and reach out stochastic geometry.

III. Irony: None of your colleagues is aware of its existence because it became accessible only with the advent of this textbook.