USEEJ7 - Performance Evaluation for Connected Systems

Mis à jour le 16-03-2026

Code : USEEJ7

Unité spécifique de type cours

6 crédits

Responsabilité nationale :
EPN03 - Electroniques, électrotechnique, automatique et mesure (EEAM) / Pedro BRACONNOT VELLOSO

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Présentation

Prérequis

TELNET-USEEJ6 (Telecommunication Networks).

CSMV-USEEN1 (Computer Systems Modeling and Verification)

OSCA-USEEN2 (Operating Systems and Computer Architecture)

OR-USEEN3 (Operations Research)

Objectifs pédagogiques

Learn the main principles of performance evaluation techniques applied to computer networking

Programme

Contenu

Part I — Queueing Theory
Introduction
Basic concepts of probability
Discrete Random Variables
Continuous Random Variables
Expectation
Conditional distribution and expectation
Stochastic Process
Discrete-Time Markov Chains
Continuous-Time Markov Chains
Network of queues

Part II — Simulations
Random number generation
Generating Discrete random variables
Generating Continuous random variables
Discrete event simulation
Statistical Analysis of simulated data

Modalités de validation

- Projet(s)
- Examen final

Description des modalités de validation

Hands-on labs are organized to cover key parts of the teaching module and evaluated based on lab reports. The final exam is based on exercises covering the whole module.

Bibliographie

Titre	Auteur(s)
The art of computer systems performance and analysis	Raj Jain
Probability and Statistics with Reliability, Queuing, and Computer Science Applications	Kishor S. Trivedi
Computer networking: a top-down approach	James F. Kurose and Keith W. Ross