

Masteroppgave 2024



Knowledge is power

Advanced ML Models for Analyzing Network Quality Variability

Relevant methods:

- Time-series modeling
- Hierarchical modeling
- Generative models
- Change-point detection

Description and Objectives:

In an ideal world, computer networks would operate flawlessly, delivering data instantaneously without any loss. However, in reality, all networks experience some level of latency and packet loss. This project focuses on ΔQ , a sophisticated network quality metric that quantifies these imperfections. You will delve into the development of generative models to understand how network performance metrics like latency and packet loss evolve over time. This groundbreaking research aims to pioneer the use of ΔQ generative models, offering a unique opportunity to make a significant academic contribution.

Approach:

- Use a simple simulator to generate time-series traces from a known model
- Develop a learning algorithm that does better than “the global approach” on the simulated dataset
- Test the algorithm on real-world network data

References:

[1]: Teigen, B. I., Davies, N. J., Thompson, P., Ellefsen, K.O., Skeie, T., Torresen, J. “ ΔQ Generative Models: Modeling Time-Variation in Network Quality”

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