

MSc thesis defense presentation

Ισίδωρος Τζιτης defends his MSc thesis

Date:	Τετάρτη, 22 Νοβ 2017
Ώρα:	17:00
Location:	Σχολή Ηλεκτρολόγων Μηχανικών και Μηχανικών Υπολογιστών, ΕΜΠ (παλαιό κτίριο), 1.1.31
Thesis title:	On-line Shortest Path with Switching Cost
Committee:	<ul style="list-style-type: none">• Δημήτρης Φωτκής• Αριστείδης Παγουρτζής• Ευσταθιος Ζήχος

Thesis abstract

A typical on-line problem proceeds in rounds, where in each round an on-line algorithm is given a request and needs to serve it. We will focus on a

specific class of on-line problems known as Smooth On-line Convex Optimization (SOCO) problems. Two mature research fields that study such problems

are competitive analysis and on-line learning. We will dive into their interrelationship and we will explain how we can benefit by introducing regularization, a

standard technique from on-line learning in the framework of competitive analysis. Subsequently, we will turn our attention towards a rounding technique

introduced over the last couple of years, called exponential clocks. Finally, we will define a new problem in the class SOCO, namely On-line Shortest Path with Switching Cost. Using the toolbox provided by the literature we will obtain an

on-line fractional solution sacrificing a logarithmic factor. We will wrap up presenting a new on-line rounding algorithm using exponential clocks which will

derive a $\log m \log n$ -approximation for the On-line Shortest Path with Switching Cost problem.