MSc thesis defense presentation

<u>Χρ■στος-Αλ■ξανδρος Ψωμ■ς</u>
<u>defends his MSc thesis</u>

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Thesis title:	[Strategyproof Allocation of Multidimensional Tasks on Clusters](#)
Committee:	• [Ευ■γγελος Μαρκ■κης](#) • [Αριστε■δης Παγουρτζ■ς](#) • [Ευστ■θιος Ζ■χος](#)

Thesis abstract

The present thesis focuses on the problem of fair resource allocation in a system containing multiple machines with multiple resources each. The users have heterogeneous demands and Leontief preferences, i.e. demand resources in fixed proportions. Resource allocation is a key issue in the design of cloud computing systems. Traditional solutions, like max-min fairness per resource don't work well in this multi resource setting. Furthermore, efficiency and fairness are not the only issues here; the designer must take into account the users' incentives. In the past couple of years this problem has received a lot of attention from the algorithmic game theory community. We review some the most important results related to multi-resource allocation, starting from the work of Ghodsi et al ([7]) that studied the problem on a single machine setting with fractional tasks. We then move on to the indivisible tasks on a single machine case, studied by Parkes et al ([13]). Finally we discuss the work of Friedman et al ([4]) that studies the problem of executing indivisible, containerized tasks on a multiple machine setting.