

ERICCA. Detección de oficio de colusión en la contratación pública

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Detección de oficio. ERICCA



L'ACCO aposta per l'ús de la intel·ligència artificial en la lluita contra els càrtels en la contractació pública [↗](#)



Detecção colusión mediante redes neuronales

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Flagging cartel participants with deep learning based on convolutional neural networks



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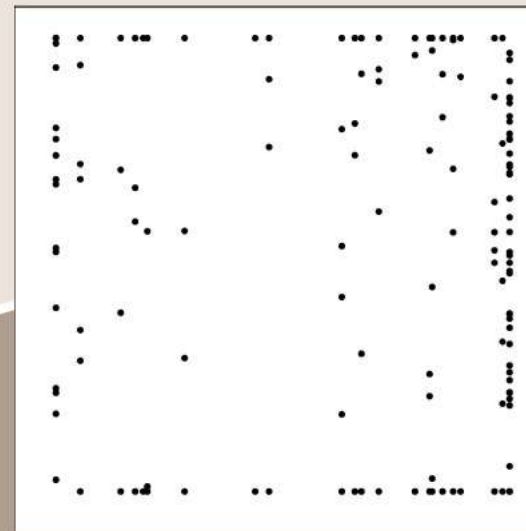
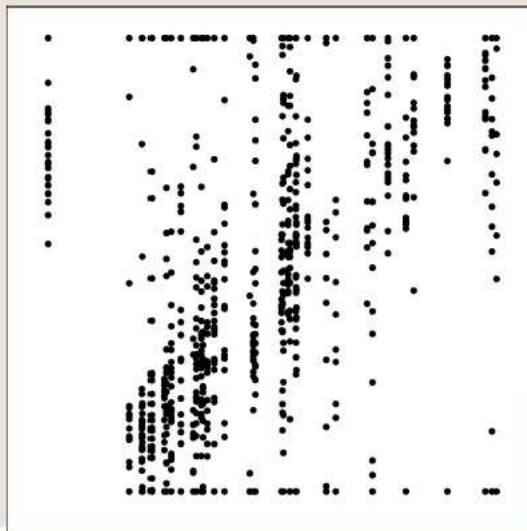
D40

ABSTRACT

Adding to the literature on the data-driven detection of bid-rigging cartels, we propose a novel approach based on deep learning (a subfield of artificial intelligence) that flags cartel participants based on their pairwise bidding interactions with other firms. More concisely, we combine a so-called convolutional neural network for image recognition with graphs that in a pairwise manner plot the normalized bids of some reference firm against the normalized bids of any other firms participating in the same tenders as the reference firm. Based on Japanese and Swiss procurement data, we construct such graphs for both collusive and competitive episodes (i.e. when a bid-rigging cartel is or is not active) and we use a subset of graphs to train the neural network such that it learns distinguishing collusive from competitive bidding patterns. With the remaining graphs, we test the neural network's out-of-sample performance in correctly classifying collusive and competitive

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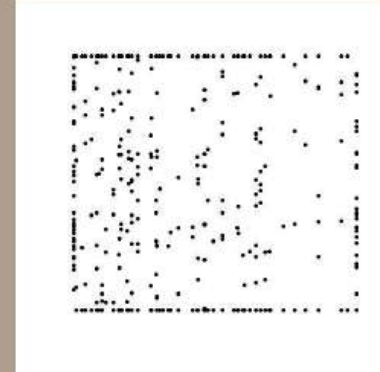
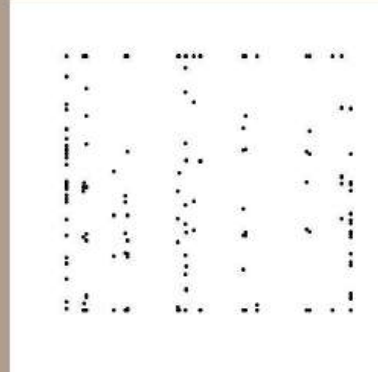
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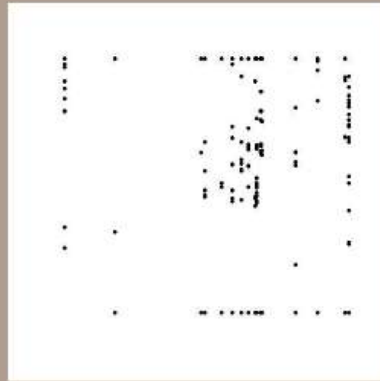
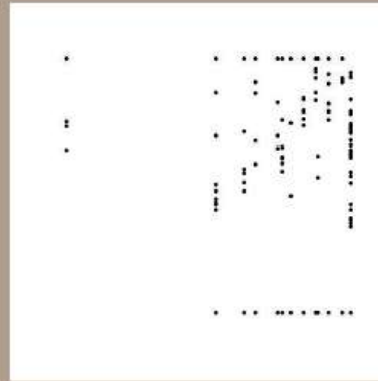
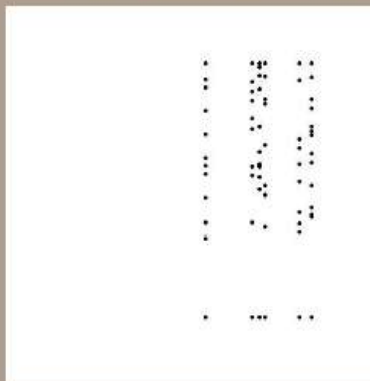
Que representen les interaccions d'ofertes parells amb altres empreses.

Detecció col·lusió mitjançant xarxes neuronals

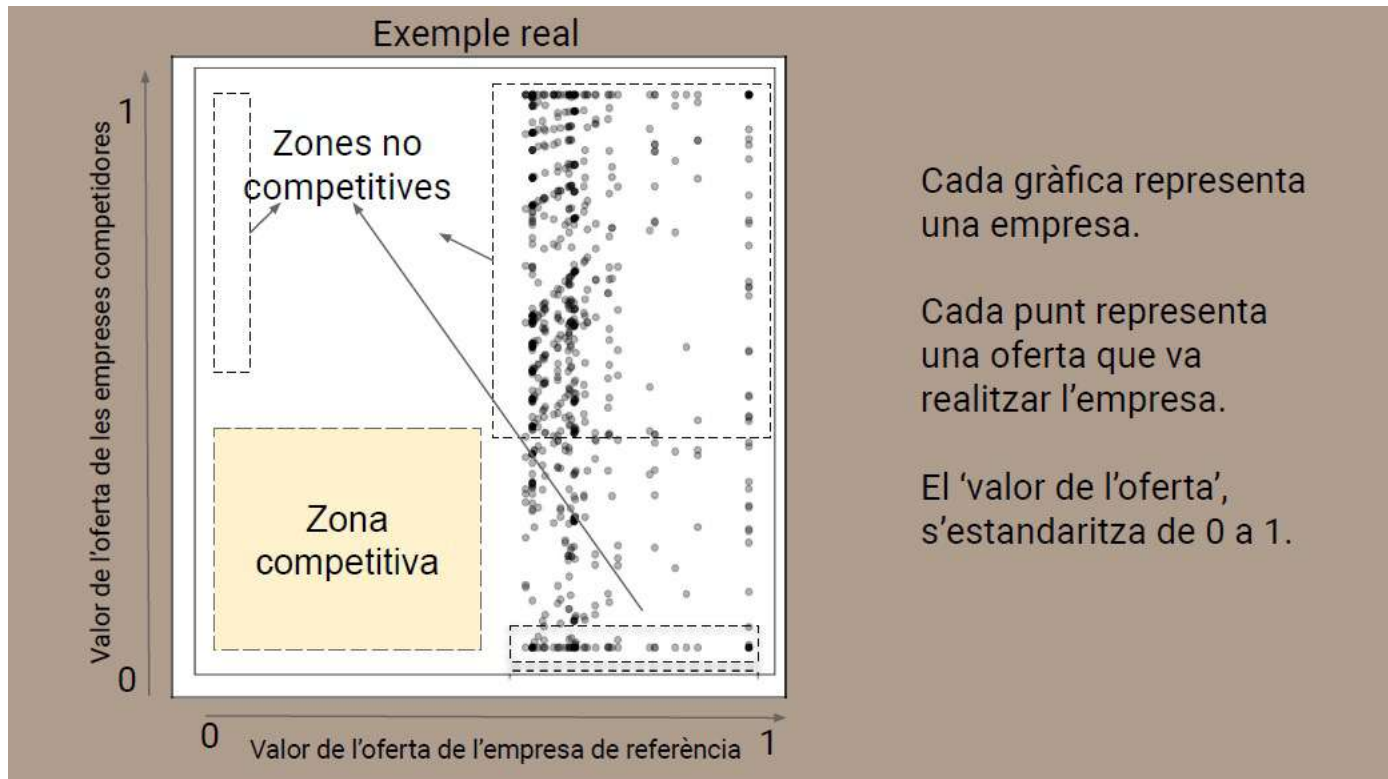
Exemples de competència

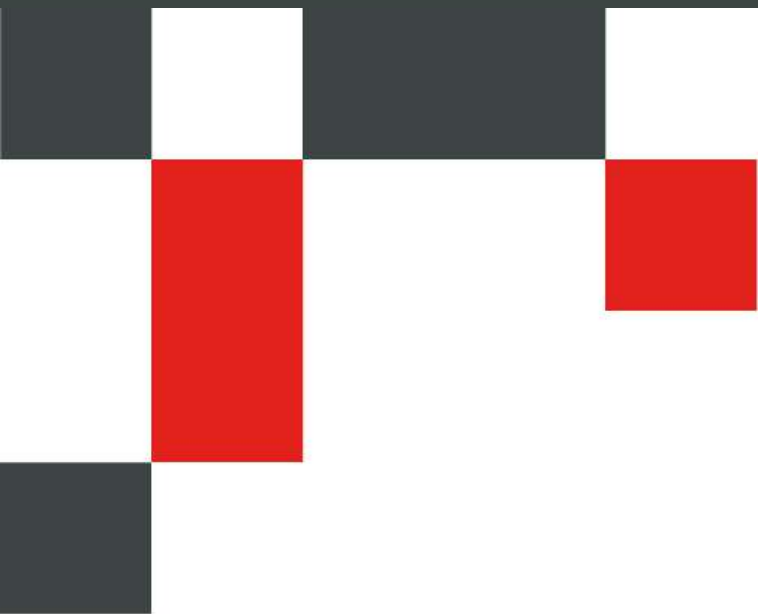


Exemples de col·lusió



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