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Publication

IEICE TRANSACTIONS on Fundamentals of Electronics, Communications and Computer Sciences Vol.E83-A No.8 pp.1732-1734

Publication Date: 2000/08/25

Online ISSN:

DOI:

Print ISSN: 0916-8508

Type of Manuscript: LETTER

Category: Graphs and Networks

Keyword:

graphs, book embedding, crossings of edges over the spine, page-number,

Summary:

This paper studies the problem of *book-embeddings* of graphs. When each edge is allowed to appear in one *or more pages* by crossing the spine of a book, it is well known that every graph G can be embedded in a 3-page book. Recently, it has been shown that there exists a 3-page book embedding of G in which each edge crosses the spine $O(\log_2 n)$ times. This paper considers a book with more than three pages. In this case, it is known that a complete graph K_n with n vertices can be embedded in a $\lceil n/2 \rceil$-page book without any edge-crossings on the spine. Thus it becomes an interesting problem to devise book-embeddings of G so as to reduce both the number of pages used and the number of edge-crossings over the spine. This paper shows that there exists a d-page book embedding of G in which each edge crosses the spine $O(\log_d n)$ times. As a direct corollary, for any real number s, there is an $\lceil n^s \rceil$-page book embedding of G in which each edge crosses the spine a constant number of times. In another paper, Enomoto-Miyauchi-Ota show that for an integer d, if n is sufficiently large compared with d, then for any embedding of K_n into a d-page book, there must exist $\Omega(n^2 \log_d n)$ points at which edges cross over the spine. This means our result is the best possible for K_n in this case.

The book crossing number of a graph G is defined as the minimum number of edge crossings when the vertices of G are placed on the spine. Save to Library. by Laszlo Szekely. Page 1. Book Embeddings and Crossing Numbers Farhad Shahrokhi 1, Ondrej S:~kora 2,*, Ls A. Sz6kely 3, Imrich Vrt'o 2,** Department of Computer Science, University of North Texas POBox 13886, Denton, TX, USA 2 Institute Save to Library. by Laszlo Szekely. Trade off between page number and number of edge-crossings on the spine of book embeddings of graphs. Article. Aug 2000. A book embedding of a graph consists of a linear ordering of the vertices along the spine of a book and an assignment of edges to pages so that edges on the same page do not intersect. The minimum number of pages in which a graph can be embedded is its pagenumber. The following results are presented: (1) any graph of genus g has pagenumber O(square root g); and (2) most n-vertex d-regular graphs have pagenumber Omega (square root dn/sup 1/2-1/d/). View. Graph embeddings are the transformation of property graphs to a vector or a set of vectors. Embedding should capture the graph topology, vertex-to-vertex relationship, and other relevant information about graphs, subgraphs, and vertices. More properties embedder encode better results can be retrieved in later tasks. We can roughly divide embeddings into two groups Number one is on the place where an encoded word appears in the dictionary. The hidden layer has no activation function, its output presents an embedding of the word. The output layer is a softmax classifier that predicts neighborhood words. Nodes in sub-graph are not further than the selected number of edges away. Training the skip-gram model. Graphs are similar to documents.