UDC 681.518
Amobi Emmanuel
Ternopil Ivan Puluj National Technical University, Ukraine

SIMULATION OF A WEBSITE INTERACTION WITH CLUSTERIZED ENVIRONMENT

Амобі Кхіджіоке Еммануель
МОДЕЛЮВАННЯ ВЗАЄМОДІЇ ВЕБ САЙТУ З КЛАСТЕРИЗОВАНИМ ОТОЧЕННЯМ

In recent decades WWW expanded explosively, paving way for social networks evolution. Structure of social networks has become a subject of study within statistical theory of complex systems [1-3]. Among other parameters determining connectivity of individuals, a space (time zone) distribution is also important in social networks to minimize the efforts and to maintain a social tie connecting users with their spatial neighbors. For a successful optimization [4] of web sites related to local media or social networking as well as E-commerce, it is crucial to assess the spatial component [2], simply put, to check whether on average the majority of users from a subgroup are in one spatial neighborhood. Website for an actual online talk show was designed by the Author which can accumulate necessary statistical data to elucidate this important issue. For each user, a certain number of attributes is known which allow identifying his activity, location or time zone. Basically, the site was built using HTML, CSS and Javascript. The HTML scripts are used for the creation and organization of elements within the web page while the CSS scripts are used for the design and layout of the web page. There is another dimension of a website design which can be described in depths by complex system theory [3], namely links to other sites and social network pages, represented as directed edges. In present study, a stochastic model is developed and used for simulation of a website interaction with clusterized environment to improve web site functionality. Criteria of model-to-system correspondence were chosen and the system parameters identification algorithms were developed in this study. Check of the model adequacy, data for input analysis and validation were collected through the Author's web site.

Literature
1. Barthelemy M. Spatial Networks // arXiv:1010.0302v2 [cond-mat.stat-mech] 4 Nov 2010. Available at scf.berkeley.edu/~aldous/206-SNET/Papers/barthelemy_survey.pdf.
2. Girvan M., Newman M.E.J. Community structure in social and biological networks Proceedings of the National Academy of Sciences, vol. 99, no. 12, p. 7821–7826, 2002 Available at http://www.pnas.org/content/99/12/7821.full.pdf.
3. Holovatch Y. et al. Complex networks // Journal of Physical Studies, vol. 10, Issue 4, p.247-289, 2006.
4. Melnyk O.S., Zagorodna N.V. Search engine website optimization // Current issues in modern technologies. Book of abstract of the IV International scientific and technical conference of young researchers and students 25th-26th of November 2015, , Volume I, p.34.