Ant Colony Optimisation For Multicast Routing

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**Abstract**—Ant colony optimization (ACO) is a new optimization algorithm, and has the limitation of stagnation. In this paper, the performance of ACO is improved and the improved ACO is combined with heuristic algorithm to solve the multicast routing problem. Simulation shows that the results of this algorithm for multicast routing are better than the heuristic algorithms; this algorithm is also well suited for parallel implementation and execution.

**Index Terms**—WebGL, Security problems,Secure WebGL, Ext JS 5, Touch, Animator

**1 INTRODUCTION**

MANY multimedia communication applications require

a source to send information to multiple destinations

through a communication network. To support these

applications, it is necessary to determine a multicast tree

of minimal cost for every communication session.

The problem of determining multicast trees is

NP-complete. This problem is also could be considered as

the Steiner tree problem. Good heuristic algorithms are of

practical. Kyou et al. [l] proposed a heuristic algorithm

for Steiner tree problem. This algorithm is based on the

MST (minimum Span tree) algorithm, and takes a pseudo

polynomial time, but this algorithm could not get the best

result. Two genetic algorithms were proposed to solve the

Steiner tree problem [2] [3]. But these algorithms have

some limits, such that the neighbor matrix of the network

is taken as the code; it is complex and lowers the

efficiency of the algorithm.

Ant Colony Optimization is a new Optimization

algorithm; it is used in many Optimization problems now.

In this paper, we combined ACO with the heuristic

algorithm for multicast routing. This paper is organized as

follows: The ACO algorithm is described in section ***2.*** The

multicast routing algorithm based on ACO is presented in

section 3. Simulation results are given in section 4.

Conclusions are presented in section 5.

**2 ANALYSIS OF WEB TECHNOLOGIES**

**2.1 WebGL**

WebGL is based on OpenGL ES 2.0. WebGL is a new web standard for browsers which aims to bring 3D graphics to any page on the internet. It has recently been enabled by default in Firefox 4 and Google Chrome, and can be turned on in the latest builds of Safari. Context has an ongoing interest in researching new areas affecting the security landscape, especially when it could have a significant impact on the clients.

Android devices now have pretty good support for WebGL. This allows us to write the majority of our demo once and get performance numbers for both desktop and mobile.

**WebGL is faster to develop with.**

Its benefits: lightning-fast iteration times, lots of open-source third-party libraries, some nice language features such as functions as first-class objects and JSON serialization

**2.2 Sencha**

Sencha has various products and each has its unique significance.

1) Sencha **Ext JS**-most powerful desktop application development platform with unparalleled cross-browser compatibility.

2) Sencha **Touch**-everything you need to create powerful, universal mobile web apps

3) Sencha **Animator**-create CSS3 animations for WebKit browsers and touchscreen mobile devices.

In this paper we are trying to focus mainly on Ext JS, Touch and Animator. All of these help in GUI development and game creation

**2.3 CakePHP**

**2.4 PhoneGap Build**

**2.5**

**3 OUTCOMES OF A SURVEY (STUDY REPORT)**

**3.1 WebGL**

Initially released on March 3, 2011, the WebGL was claimed unsafe. There were **dangers** with WebGL that put users’ data, privacy and **security at risk**. These issues allowed an attacker to provide malicious code via a web browser which further allowed attacks on the GPU and graphics drivers. These attacks on the GPU via WebGL rendered the entire machine unusable. Most of these challenges are obliterated and a **stable and secure version** was released in 2013 ,but still various enhancement could be made.

**3.2 Sencha**

Ext JS 5 adds support for touch-based gestures and now allows desktop Ext JS apps to run on touch-screen devices such as tablets and touchscreen laptops and is available under the GPL v3 open source license. The JS is very powerful.

Sencha Touch was initially quite unstable but Touch 2 has brought about stableness. It’s a technology thats lightyears ahead.

With Sencha Animator 1.5, you simply drag and drop objects onto a canvas, and then adjust related properties and key frames to create rich interactive animations. This versatile tool has been used to create games, ads etc.

All the sencha Applications have a far way to go. Programmers are pleased enough. Enough developers are currently working on Sencha and most famous sites use Sencha for UI purposes.

**3.3**

**3.4**

**3.5**

**4 CONCLUSION**

In this paper we have discussed, reviewed and appraised the currently upcoming web technologies. In addition to this we tried to narrate the various upgrades that can be made to achieve a new feat.

**5 ACKNOWLEDGEMENTS**

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