Giorgos Kritikakis

Software Engineer, Data Analyst

E-mail: georgecretek@gmail.com
Mobile: (+306986209315)
Location: Heraklion,Crete,Greece
Personal Web Page: giorgoskritikakis.github.io

Summary

My name is Giorgos (George). I hold an M.Sc. degree in Computer Science (University of Crete). My area of interest includes Software development, Algorithms and Systems Analysis, Data Analysis and Visualization. Recently I developed a general-purpose Hierarchical graph drawing framework (Path Based Framework), Path/Chain decomposition graph techniques, transitive closure, and reachability query solutions addressing several open problems. Early results of Path Based Framework were presented as posters in gd2020 (28th International Symposium on Graph Drawing and Network Visualization). Currently, I serve in the Research and IT Department at Greek Army. (From March 2022 to December 2022).

Education

M.Sc. [Feb 2022]
University of Crete, Heraklion, Crete, Greece
M.Sc., Computer Science
Area of Study: a)Algorithms and Systems Analysis,
b) Parallel and Distributed Systems
M.Sc. Thesis: "Analysis and Visualization of Hierarchical Graphs"

B.Sc. [2020]
University of Crete, Heraklion, Crete, Greece
B.Sc., Computer Science
Area of Study: Software Systems and Applications
Thesis Topic: "Extension of the PARTEE runtime system with support for dynamic memory allocation"

Research Interests

• Algorithms and Applications. • Graph Theory. • Graph Drawings • Networks • Data Analysis • Data Visualization • Concurrency • Programming Languages

Teaching Experience

- CS-484 Complex Network Dynamics [Spring 2021]
  (Postgraduate teaching assistant)
- CS-380 Algorithms and Complexity [Fall 2021,Fall 2020]
  (Postgraduate teaching assistant)
- CS-486 Principles of Distributed Computing [Spring 2020]
  (Postgraduate teaching assistant)

Programming languages

• Java. • C/C++ • Python • Ocaml • Javascript

Publications

- Algorithms and Experiments using the Path Based Hierarchical Drawing Framework. Panagiotis Lionakis, Giorgos Kritikakis, and Ioannis G. Tollis
  (poster, gd2020)

Applications/Technologies

NetworkX , yWorks , TSP(Tom Sawyer Perspectives) , OGDF(Open Graph Drawing Framework), pthreads , java threads , OMP , MPI , Latex , C Intermediate Language (CIL) , Visual Studio , Eclipse , NetBeans , VirtualBox , Git , Matlab , Unix Shell , LLVM , jfree

Operating systems: Windows ,Linux

Web Developmen: HTML , CSS , CSS Grid ,CSS Flexbox , Bootstrap ,Javascript , JSP, AJAX.

Additional Info

Passionate and curious, I like learning new things. I have attended more than 100 hours of training on online platforms like Udemy in topics like IoT, wireless communication, Arduino Raspberry and esp boards, version control systems (git and GitHub), Linux inter-process communication, web development, and more. Additionally, i have finished lifeguard's school and has long experience as a seasonal lifeguard on the coasts of north Crete.

Considerable Projects

Bachelor Thesis

Extension of the SCOOP compiler source-to-source C code transformations. SCOOP produces output for PARTEE run time system, a project developed at Computer Architecture and VLSI Systems (CARV) Laboratory of the Institute of Computer Science (ICS) of the Foundation of Research and Technology Hellas (FORTH). Scoop is a source to source compiler that effectively integrates static and dynamic analysis in code generation. The static analysis can work with combination with existing dynamic analyses and task parallel runtimes , in our case PARTEE runtime that use annotations to specify tasks and their memory footprints. Scoop enables us to use pragma directives for the task annotation.

Several Projects

General purpose hierarchical graph drawing framework

HY583-Graph Algorithms

In the paper "A New Framework for Hierarchical Drawings" by Giacomo Ortali and Ioannis G. Tollis was presented the idea of a new approach for hierarchical graph drawings. A compaction algorithm was implemented for that technique and inserted the path transitive edges that was omitted. Hence, a general purpose hierarchical graph drawing framework was built.

Top-down (2, 3, 4) tree with fine-grained synchronization

HY486-Principles of Distributed Computing

QBert 2D game

HY452-Software Systems and Applications

Allegro library and C++ were used. A project of 2.5K lines of code implemented with a specific architecture.

2D card game

HY252-Object-Oriented Programming

Java, Model–view–controller architectural pattern was used

Liquid Democracy

HY359-Web Programming

Liquid Democracy is a more agile form of democracy. To romote this system of voting, a web-page is ideas constructed based on Java CGI to sign up/login and vote for which concern you. Moreover, you can create your own topics and let the community vote them online. You can even elect a delegator if you have trust on someone else except of yourself. (html, css, javascript, ajax requests, json, servlets, sessions, cokkies , apache server)

Iperf imitation

HY435-Network Technology Programming Lab

Socket programming

micro tcp protocol

HY335-Computer Networks

A reliable protocol over UDP with key features of TCP, socket programming

Barnes-Hut algorithm, sudoku, game of life

HY342-Parallel Programming

pthreads , java threads, OMP

Linux C shell(command interpreter)

HY345-Operating Systems

Processes manipulation ,System Calls , interprocess communication(pipes) , shell variables , redirection (dump2).

- **Alpha programming language(compiler)**

  HY340-Languages and Compilers

  Lexical analysis(lex) , syntax analysis(yacc) , intermediate code generation (quads), target code and virtual machine.

- **Remote control and monitoring system for devices and sensors**

  Raspberry Pi, arduino , full-stack development, DYI project