GRAPH DRAWING 2016

24th International Symposium on

Graph Drawing &Network Visualization

September 19–21, 2016. Athens, Greece

http://algo.math.ntua.gr/~gd2016/

PhD School on Visualization Software

22-23 September, 2016

PROGRAM

National Technical University of Athens

Thursday, September 22, 2016:

Tom Sawyer Visualization Software

Description: The morning session will give an in-depth introduction to Tom Sawyer Software's research and practical work on graph drawing software. We will explain and demonstrate how we have approached and solved many difficult problems in layout, labeling, and routing when we have had to consider many design considerations all at once. We will explain when problems of graph drawing require graph theory background and when they require more experience in computational geometry. Our work ranges from the issues of scalability with very large drawings, to problems in complex nested drawings with high-degree nodes, connectors, labels and constraints. A great deal of our somewhat unique work and the solutions we have found have not yet been published in the graph drawing community.

The afternoon session will demonstrate the more broad capabilities of our Tom Sawyer Perspectives graph and data visualization system, and how our software is now used in numerous industries including the public sector, in finance and fraud detection, IT, energy, telecommunications and networking, and in aerospace and manufacturing. As time allows, we will show how we can quickly configure applications to meet very specific needs. We can also discuss whether professors and students would like to use this software in their masters and diploma thesis work, or for doctoral or postdoctoral research, or for student classroom projects.

Presenter:

- **Brendan Madden** has worked for thirty years on the design and engineering of advanced graph drawing and data visualization systems. His experience includes working twenty-five years at Tom Sawyer Software and five years working on graph drawing at the IBM TJ Watson Research Center. He studied Applied and Engineering Physics at Cornell University.

Friday, September 23, 1026:

yFiles Diagramming Software

Description: The tutorial on yFiles will consist of two parts. The morning session will start with an overview over the yFiles product family, its main features and the underlying architecture. Some of the most prominent layout algorithms will be presented, their customization options to optimize the layout result and typical challenges when a theoretical algorithm meets real-life requirements. Furthermore this session will cover various options to create appealing visualizations of the graph elements and to customize user interaction.

The second part will be a tutored practical session where the participants work in groups to fill a given demo application with life. This will build upon the topics presented in the first part e.g. finding a good layout for a given data set, presenting the business data in an appealing way and reduce visual complexity to make the data more approachable. Finally the groups get the chance to present their results and discuss the challenges they met.

Presenters:

- **Christian Brunnermeier** studied Computer Science at the University of Passau. He focused on the topic of graph drawing at the chair of Prof. Dr. Brandenburg and graduated with a diploma thesis about an incremental sugiyama algorithm advised by Dr. Wolfgang Brunner. Since 2008 he works at yWorks, first as part of the layout team and now as product lead for yFiles for Java 3.0.

- **Jasper Möller** studied Mathematics and Computer Science at the University of Konstanz. He focused on algebraic topology and graph drawing and graduated with a diploma thesis about automatic layout of chemical structures, advised by Prof. Ulrik Brandes. Since 2005 he works at yWorks as part of the yFiles.NET and WPF teams.

Requirements:

- Laptop with an installed JDK8
- Modern IDE (IntelliJ IDEA, Eclipse or NetBeans)

Instructions:

- Download the bundle from yWork website (link and download credentials will be sent by email)
- Open IntelliJ IDEA, Eclipse or NetBeans project file or alternatively follow the installation instructions described in the README file
- Start getting familiar using the Getting Started tutorial or the Getting Started Chapter in the Developer's Guide.

Detailed Program:

Thursday September 22	
Tom Sawyer Visualization Software	
09:15-10:45	*Session 1*
10:45-11:15	**Coffee Break**
11:15-12:45	*Session 2*
12:45-14:00	**Lunch Break**
14:00-15:30	*Session 3*
15:30-16:00	**Coffee Break**
16:00-17:30	*Session 4*

Friday September 23	
yFiles Diagramming Software	
09:15-10:45	*Session 1:* General concepts and features
10:45-11:15	**Coffee Break**
11:15-12:45	*Session 2:* Algorithms and practical challenges
12:45-14:00	**Lunch Break**
14:00-16:00	*Session 3:* Practical session
16:00-16:30	**Coffee Break**
16:30-18:30	*Session 4:* Practical session and presentation

VENUE

National Technical University of Athens
http://www.ntua.gr
Central Library – Multimedia Theatre

Zografou Campus
(Enter from Kokkinopoulou Gate)

In this link http://map.ntua.gr/google_en.htm you could see exactly where will be the meeting (Choose **Misc** and check ☐ Multimedia/Tele-teaching Rooms). The meeting will be in the lower level of Central Library in the Multimedia / Teleteaching rooms.

The photos below show the exterior of the venue of the meeting -the Central Library of the campus is the high building.

For more information concerning transportation, please visit:
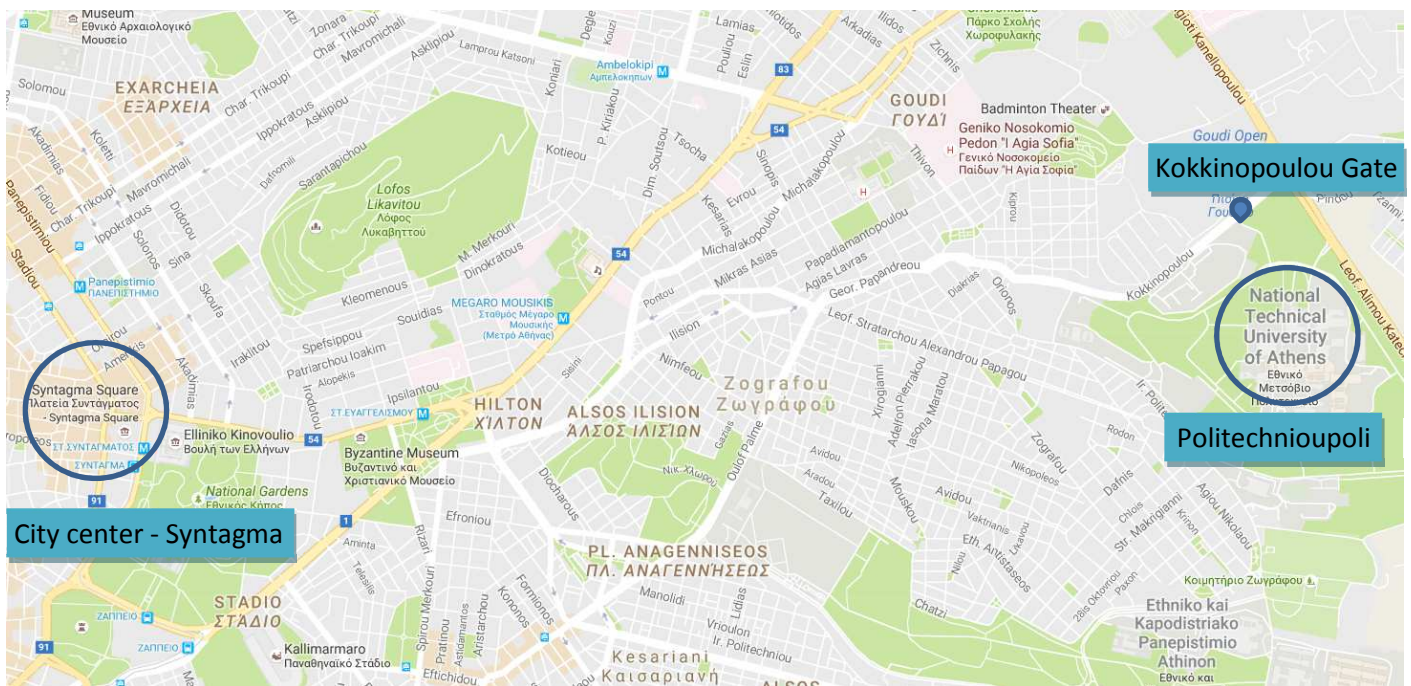http://www.ntua.gr/en_ntua/campus.htm

TRANSPORTATION to NTUA

- (*Recommended*) Taxi from the city center to NTUA will cost 8 – 10 €. If you come to NTUA by taxi please tell the driver to take you to:

> **Library Building**
> **Politechnioupoli – Zografou**
> **Kokkinopoulou gate**

> **Βιβλιοθήκη**
> **Πολυτεχνειούπολη – Ζωγράφου**
> **Πύλη Κοκκινοπούλου**

(or show the map below).

- (*Recommended*) Taxi from "Katechaki" metro station to NTUA will cost 3.50 €. If you come to NTUA by taxi please tell the driver to take you to:

Library Building
Politechnioupoli – Zografou
Katechaki gate

Βιβλιοθήκη
Πολυτεχνειούπολη – Ζωγράφου
Πύλη Κατεχάκη

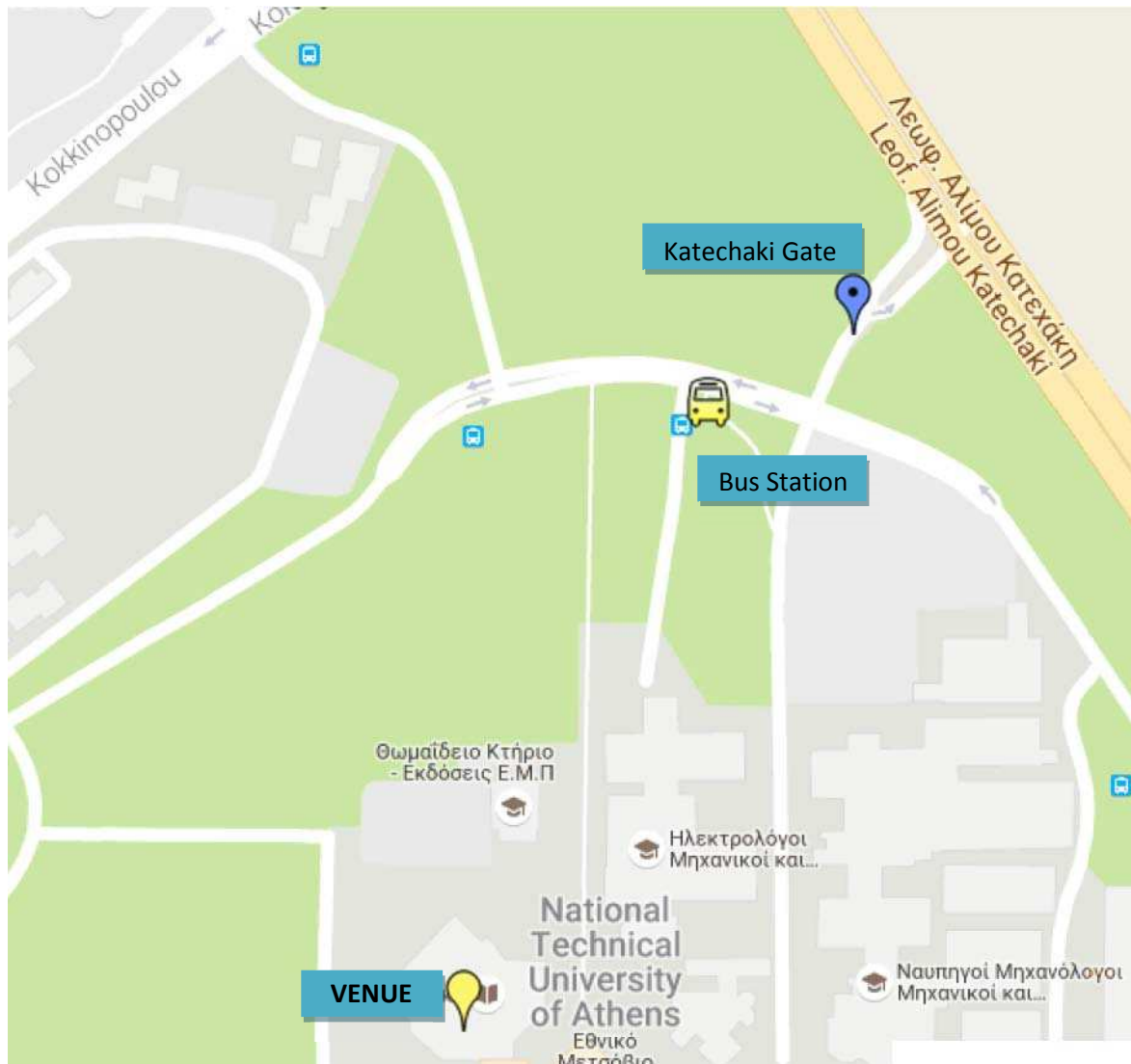(or show the map below).
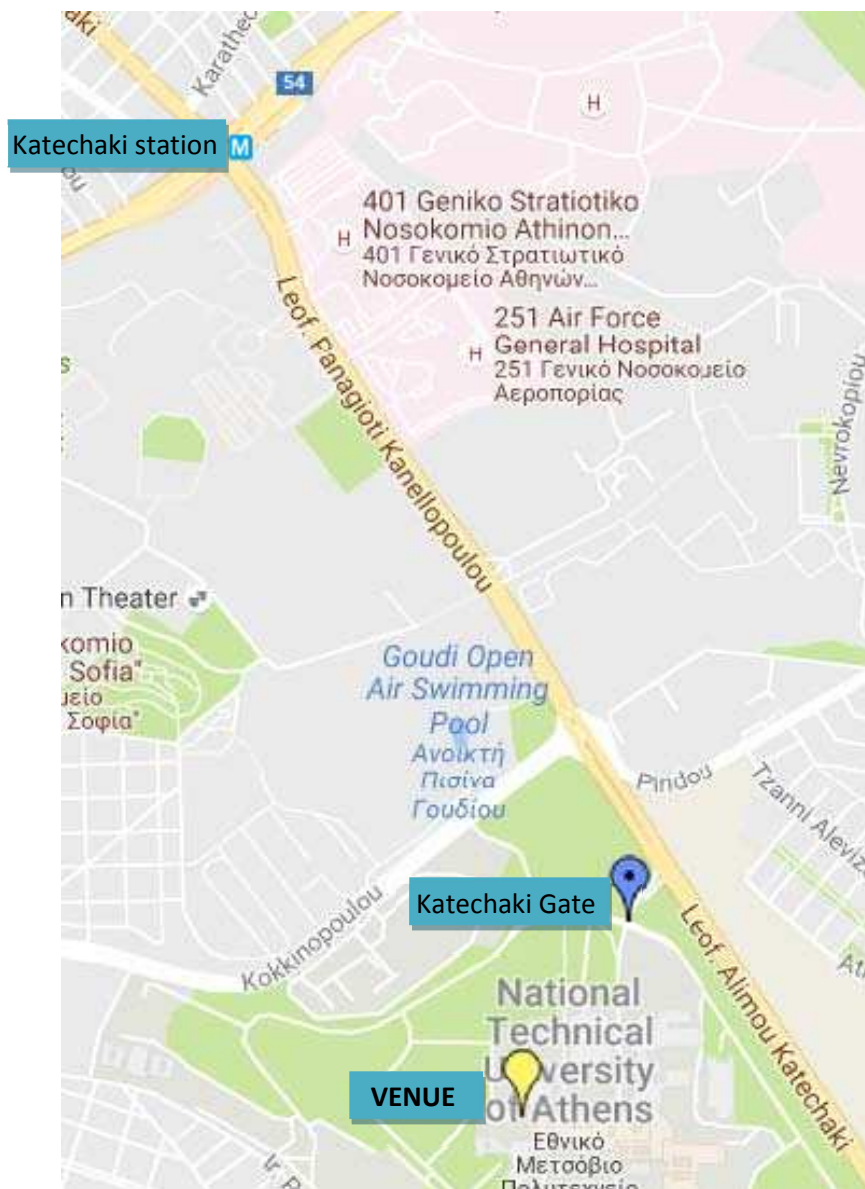
- (*Not recommended*) If you use metro (blue line) to come to NTUA, you have to get off at "***Katechaki***" metro station and take **bus 242**. You get off at the first stop inside the Campus and walk towards Central Library.

METRO MAP

Kifisia **M1**
KAT
Marousi

Acharnai Railway Center — Metamorfosi — **Nerantziotissa**
Aspropyrgos
Irakleio

Magoula
Nea Peramos
Agioi Theodoroi
Megara
Kineta
Corinth
Zevgolatio
P1 Kiato

Ano Liosia **P2**

Agioi Anargyroi

Kifisias
Pentelis

Eirini
Irakleio
Nea Ionia
Pefkakia
Perissos
Ano Patisia
Agios Eleftherios
Kato Patisia
Agios Nikolaos

Doukissis Plakentias

Chalandri
Agia Paraskevi
Nomismatokopio
Holargos
Ethniki Amyna
Katechaki
Panormou
Ambelokipi
Megaro Moussikis
Evangelismos

Pallini
Paiania-Kantza
Koropi

Special ticket section

Athens International **M3** **P2**
Airport

M2 Anthoupoli
Agios Antonios
Peristeri — Sepolia

Attiki

Larissa Station
Athens

Victoria

Omonia

Metaxourghio

Panepistimio

M3 Agia Marina
Agia Varvara
Korydallos
Nikaia
Maniatika

Egaleo — Kerameikos — **Monastiraki**
Eleonas

Piraeus Extension now under construction

Syntagma
Akropoli
Syngrou Fix
Neos Kosmos
Agios Ioannis
Dafni
Agios Dimitrios
Ilioupoli
Alimos
Argyroupoli
Elliniko **M2**

Thiseio
Petralona
Tavros
Kallithea

Rentis
Lefka

M1 **P1** Piraeus
Dimotiko Theatro

Faliro — Moschato