Fact Sheet – Symposium on Apps

Chair : Lars Erik Holmquist, Yahoo! Research, USA
Conference : Wednesday 28 November – Saturday 1 December 2012
Exhibition : Thursday 29 November – Saturday 1 December 2012

The second Symposium on Apps at SIGGRAPH Asia 2012 in Singapore is a platform for both industry and academia to introduce the opportunities and challenges of mobile applications development to the global graphics community. The program will educate and explore how visual and animation techniques can be used on mobile devices to create compelling end user experiences and to drive the use of advanced graphics capabilities on billions of new devices. In an Invited Panel, experts from academia and industry will discuss and explain the current market for mobile apps. Among others, spokespeople from Motorola and Yahoo! Labs bring their knowledge of future directions to the table.

Fast Facts

There were 11 submissions accepted for this year's Symposium on Apps at SIGGRAPH Asia 2012. The accepted submissions are categorized into sessions and could be a panel, a presentation or a workshop.

Two panels are featured this year, one Invited Panel with an emphasis on the marketplaces for developers, and another focusing on the development of Museum Apps for children. This year, we explore the unique qualities in mobile Apps, what new ways 3D can be used in mobile devices. And there is a new look at Augmented Reality in games.

There will be demonstrations of unique mobile Apps, happening all day on Friday, 30 November.

Quote from the SIGGRAPH Asia 2012 Symposium on Apps Chair, Lars Erik Holmquist, Yahoo! Research, USA

"The Symposium on Apps program at SIGGRAPH Asia 2012 will cover the development, technology, and marketing of mobile applications, including but not limited to computer graphics software and hardware, games, augmented reality, location-based services, animation, and social networking.

"This year's program will put more emphasis on graphics and replace 'motion tracking' with more generic categories. Similarly, the program will reflect what actually appeared at last year's Symposium on Apps, which included several Augmented Reality applications."

SIGGRAPH Asia 2012 Symposium on Apps highlights

One of the many highlights of the Symposium on Apps program this year is the Invited Panel, covering the burgeoning market for App developers.

• *The Curse of Choice - How Will Users Find My App!?*
Florian Michahelles, Auto-ID Labs Zürich/St. Gallen and ETH Zürich
Nan Zhong, ETH Zürich

Henriette Cramer, Yahoo! Labs
Frank Bentley, Motorola Applied Research Center
Niels Henze, University of Stuttgart
Jaden Y Choi, Tgrape

Finding a mobile app and being found among the hundreds of thousands listed in today's app stores has become a real challenge for both consumers and developers. However, aggregated sales of niche products contribute to large portions of sales, referred to as 'long tail', is a rather typical characteristic of digital markets and has often turned out as clear advantage over the traditional physical markets being constrained by higher transaction costs. Consumers have greater selection to choose from increasing the chance of satisfying their needs.

This panel will explore the premise that what is beneficial for the overall marketplace is not necessarily beneficial for the single developer. Which strategies developers can apply in order to stand out from their competitors? How can they show that they have developed an app which is just better than existing ones? How can they catch the consumer's attention on the mobile screen for promoting a complete app? How can consumers find interesting apps without knowing what actually to look for? How can consumers benefit from the experience of others and follow the crowd? Where are personal app recommender systems?

- ### *Planning and Developing Museum Apps for Kids*
  Herminia Din, University of Alaska Anchorage
  Fang Yin Lin, Bright Ideas Design

With the rise of affordable and easy-to-use smart devices, millions of players have played an app, or joined an online game world. In short, people are spending a lot of time online. This panel will discuss how mobile apps and games can take museum content out of the building and into the hands of children and families. Drawing on both commercial and educational examples, how to harness the power of children's online gaming into the design of museum apps will be explored. Also, this session will begin a conversation by examining how deeply players are engaged and immersed in these online worlds, games, and apps. When players spend time "playing" online, it does not mean players/users are not learning, exploring, or investigating. Thus, this session will also discuss how to apply sticky game strategies to the design and planning of museum apps to help connect online and onsite experiences.

- ### *Optimizing OpenGL ES Applications for Mobile Devices*
  Dave Shreiner, ARM

This presentation considers the best practices of using OpenGL ES for mobile applications. As the set of features of embedded GPUs approach those of desktop systems, applications can create more compelling renderings and interactive experiences. However, not all GPUs are created the same, and embedded GPUs often operate in different ways to their larger brethren.

This talk begins with an overview of how GPUs operate, contrasting traditional pipelines with those implementations in embedded devices. Knowing how embedded systems operate, we continue by exploring the effects of various OpenGL ES programming idioms, and how those cause GPUs to operate.

From specifying vertices for the geometric objects in your application's scene, to understanding texture compression formats, we discuss describe in short code snippets the best practices for most of the GPU architectures in the mobile marketplace today.

- ***Visualizing 3D Models in Aid of Public Consultation***
  Jozef Dobos, University College London

When developing land or transportation systems, it is a legal requirement to host public consultation or inquiry during which the general public can voice their concerns. Such an event can incur significant costs and for very large projects it risks not reaching the key stakeholders. This is a novel approach to visualizing 3D models fetched from a centralized repository in hope that such an approach would eventually be suitable for wide public engagement and lower the cost of running these events.

This solution automatically serves models from a 3D repository and records annotations alongside the assets and their individual revisions. In offering a scalable visualization platform, assets are streamed onto the client devices, reconstructing the 3D representation of selected models and displaying them for viewing. Using this NoSQL 3D repository can easily be extended to support various data including building information modeling (BIM) or other representations.

- ***Urban Games: Application of Augmented Reality***
  Andrzej Zarzycki, New Jersey Institute of Technology

This presentation will focus on the development of the Augmented Reality (AR) environments-- mobile apps-- that integrates history, tourism, gaming and everyday urban life. It encourages not only to consume but also to contribute to the knowledge content of these environments.
The presenter will discuss the mobile app development process with technological, creative, and human considerations. It will look at the user interface and content design as an important component of gamification of learning and everyday life. The presentation will also touch on social and cultural events facilitated by mobile technology. Specifically, it will look at a number of case studies, public events and AR environments, developed by the author and discuss limitations of present technology, user input and participation as well as emerging opportunities for the future of locative media.

- ***Mobile Mixed Reality Interface Developments***
  Antti Nurminen, HIIT, Aalto University
  Ville Lehtinen, HIIT
  Antti Oulasvirta, MPI Saarbrucken

Mixed reality systems employ either Augmented Virtuality (AV) or Augmented Reality (AR) techniques. In the mobile world, the former may be implemented with 3D representations, and the latter by overlaying graphics on top of a camera feed. These systems act as exocentric and egocentric gateways to our environment, catering for alternate sets of tasks. While an AR interface innately follows users gestures, a 3D interface allows a rich, but possibly a cumbersome browsing experience. Developments toward integration of both interfaces are shown that are in pursuit of the best possible combination for given spatial task.

- ***GoldFish: Real-world GUI Framework for Android***
  Toshiyuki Masui and Sho Hashimoto, Keio University

This presentation introduces the GoldFish framework for Android with which users can easily develop 'Real-World GUI' applications in JavaScript. A user can write various RWGUI applications just by writing a JavaScript code on the Web and defining the relation between the URL and the ID of an NFC tag. If a user wants to implement a 'slider' in the real world, he can put an NFC tag on the wall, write a JS program which detects the motion of an Android phone and control the value based on the motion, and link the tag ID and the URL. With this settings, when a user puts his Android phone on the tag, the phone detects the tag and displays the URL based on the defined relations. Then the JavaScript program on the page is invoked and used to detect the motion of the Android phone and control data based on the motion. Using this technique, any RFID tag in the real world can work as GUI gadgets like sliders, menus, etc. In this presentation, the concept of RWGUI is described and an off-the-shelf Android is shown being used as a GUI control device when using the GoldFish framework.

Demonstrations

- ***A 3D Interactive Assembly, Simulation Mobile Application for Intelligent Configurable Robot***
  Hui Zhu, Huai Zhang, Shaoping Ma, Koulin Yuan, and Xinye Zhang, Tsinghua University
  Xinguang Chen, Microsoft
  Yingtao Guo, 7starwish

This demonstration project shows how to implement a configurable robot toy control system, including assembly and simulation on an iPad. It provides a gamified virtual experience, leveraging rich gesture multi-touch, argument reality and accelerometer as well as other powerful features available on today's state of the art mobile platforms.

- ***Treble: Music for Musicians***
  Corey Manders, Institute for Infocomm Research, A*STAR

Treble: Music for Musicians is an app that is created specifically for rendering music in a completely digital way. Music composition software typically generates PDFs. But musical scores PDFs become unusable with typical gestures like pinch and zoom. Treble renders music in a manner that overcomes these issues.

- ***GimmeDaBlues: Interactive Jazz/Blues Player and Generator for iOS Devices***
  Rui Dias, INESC-Porto, FEUP, ESART, Sonicability Inc.
  Carlos Guedes, INESC-Porto, University of Porto, Sonicability Inc.
  Mario Santos, INESC-Porto

The GimmeDaBlues app for iOS devices, by Sonicability Inc., is demonstrated. It allows the user to play a jazz/blues quartet, playing trumpet and/or keyboard, while being automatically accompanied by a virtual bassist and drummer.

- ***Mobile Mixed Reality Interfaces***
  Antti Nurminen, HIIT, Aalto University
  Ville Lehtinen, HIIT

The HIIT speakers present a mixed reality interface, combining 3D maps and augmented reality, where the integration is based on spatial sensing.