
**App Inventor Summit • MIT Center for Mobile Learning @ The Media Lab**

Welcome! Our goal is for these two days to be mutually beneficial to our participants and to the MIT Center for Mobile Learning. We hope to provide you with an update on what is happening with the App Inventor project and to give you a chance to make connections and share ideas with each other. Your work over these two days will help to shape future directions for App Inventor.

**Day One Agenda • Friday, July 13, 2012**

**Location: SIXTH FLOOR OF THE MEDIA LAB (Building E-14) at 75 Amherst St. Cambridge, MA 02139**

8:15 – 9:00 **Welcome Breakfast**
9:00 – 11:00 **Plenary Session**

- **Welcome and App Inventor Update**: Hal Abelson
  Charge for the summit: how should App Inventor (service, resources, community) be improved. What should be the next steps for the project?

- **App Inventor Education Programs**: Shay Pokress
  Curriculum project update, setting the stage for the meeting, instructions for concurrent sessions.

- *Coffee Break: 10 min*

- **Development Update:** Andrew McKinney, Jeff Schiller, Sharon Perl

- **Community Gallery Update**: Dave Wolber

- **Q&A, Group Discussion**

11:00 - 12:00 **App Inventor Playground**
*Choose one, or go between the two sessions:*
Session A: Preview and demo of new features under development
Session B: Hands-on Workshop with pilot curriculum

12:00 - 1:00 **Lunch**

*Ongoing:* Use chartboards to suggest breakout topics. Top five will be scheduled for Saturday.


**Day One Agenda (Continued) • Friday, July 13, 2012**

1:00 - 2:00 **Concurrent Session 1: Sharing Our Work**

**Session A: Computer Science Education**
Ralph Morelli, Jeremy Scott, Andrey Soares

**Session B: Engaging Students with Apps for Social Good**
Arta Szathmary, Ellen Spertus, Stacy Christensen

2:10 - 3:10 **Concurrent Session 2: Sharing Our Work**

**Session C: STEM Engagement**
Audrey Bennett, Tahani Zeid, Kelly Powers

**Session D: Computing for All**
Dave Wolber, Krishnendu Roy, Ursula Wolz

**Session E: Online support for learning + Virtual Learning**
Karen Kear, Daniel Torres, Yu-Chang Hsu

3:10 – 3:20 **Snack and Move to breakouts**

3:20 – 4:45 **Working Groups Part I ****
Community/Outreach
Curriculum & Resources
Professional Development
Technical Improvements
Research
CS Education
****See footnote for working group choices***

**Charge to working groups:**
What are the recommendations of the group?
What is the follow-up plan?
Who will make it happen? Name specific action items and owners.
What are the milestones?
Be prepared to report out at the end of day two.

4:45 – 5:30 **Free Time**
Explore MIT, enjoy the outdoors, etc.

5:30 - 7:00 **Evening Reception at Google**
Finger foods, beverages, cocktails

7:30 - 9:00 **Open Lab**
*Come show off what you've been working on*
This is an unstructured session for hands-on demonstrations, sharing ideas and getting/giving feedback. Show off your own work and see what others have been working on.

**Day Two Agenda • Saturday, July 14, 2012**

8:15 – 9:00 **Breakfast and networking**

9:00 – 10:30 **Working Groups Part II**


Same groups as Friday afternoon. Group to create 3 or 4 slides summarizing plans, and elect a representative to present to larger group.
Community/Outreach
Curriculum & Resources
Professional Development
Technical Improvements
Research
CS Education

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| 10:30 – 10:45 | **Coffee break** |
| 10:45 - 12:00 | **Reports from Working Groups**<br>Each group to give 3 to 4 slide overview of goals, plans, action items and owners. |
| 12:00 - 1:00 | **Lunch**<br>Students are invited to stay for lunch. |
| 1:00 - 2:00 | **Poster Session**<br>Invited students will show off their projects. |
| 2:00 - 2:10 | **Break and move to breakouts** |
| 2:10– 3:20 | **Self-directed Breakouts**<br>Based on five most popular suggestions from Friday |
| 3:20 - 3:30 | **Snack, Farewell, Adjourn** |


**Working Group Topics - each participant should choose one group and attend both sessions of it.**

**COMMUNITY/OUTREACH**
How to get more students and teachers involved – bringing this back to the community. Discussion forums - are the current Google groups sufficient? How to build and facilitate the community of people using App Inventor.

**CURRICULUM & RESOURCES**
Discuss curriculum development goals as well as plans for wide field testing of curricular materials. Look at cutting edge learning materials and programs and think about ways that these can fit into the App Inventor project. Look at our repository of resources. How can CML better serve teachers and students? What is missing from our current offerings of resources? Talk about website resources, print materials, shared presentation materials, getting started guides, hardware recommendations, etc.

**PROFESSIONAL DEVELOPMENT**
Think about how to get new teachers up to speed (all types of teachers in different levels and subjects). What are the support structures that need to be in place for teachers to access? What would in-person PD look like. What would distance learning PD look like?

**TECHNICAL IMPROVEMENTS**
What are some specific real extensions/expansions of technology that we should add in to App Inventor. What is the vision for immediate future, what is on the horizon, what is cutting edge that we should incorporate? In each case, what is the educational purpose?

**RESEARCH**
Promising research topics: what is worth investigating? What do we know so far that we can build upon it. CE21 program goals, other programs for funding? This working group would be a good starting point for people to collaborate on proposals and/or articles.

**CS EDUCATION**
Think about App Inventor's role in CS education. Consider its use for CS>0 courses, java bridge for extending into java programming, understanding what is going on with the push for CS Principles new AP course, introducing CS courses into high schools that have none. Helping to meet the CS10K goal.


CONCURRENT SESSION DESCRIPTIONS

**Session A: Computer Science Education** *6th Floor Multi-Purpose Room*
Ralph Morelli, Jeremy Scott, Andrey Soares

***Ralph Morelli***
This talk will describe an attempt to use App Inventor in an introductory course based on the CS Principles curriculum. In addition to providing an overview of the CS Principles and a couple of examples of App Inventor lessons or tutorials that incorporate them, the talk will describe some of the challenges faced by this approach.

***Jeremy Scott***
I created "I Love My Smartphone" – a mobile app development course intended to deliver CS in a way that's relevant to students' own digital lives. An introduction teaches the history, hardware and software of mobile computing. Screencast tutorials teach app creation. Discussion-based questions and algorithm design reinforce computational thinking and a project enables meaningful interdisciplinary learning – a cornerstone of Scotland's new curriculum. Results were better than I could have hoped for. Pilot schools reported huge improvement in student engagement, classroom discipline – and interest in taking CS further. Students were also better-prepared when progressing to text-based languages.

***Andrey Soares***
This presentation is a report of my experience teaching two courses on Android Application Development with App Inventor in the Spring 2012. The student population was composed mainly of seniors with majors in Information Systems, Electronic Systems and Computer Science. The course was not designed for beginners in computer programming. Students are required to have taken an introduction to programming course as a prerequisite for the Android course. In this presentation, I will discuss the goals for this approach, which was basically to challenge the students and to allow them to focus on concepts of application development life cycle, rapid prototyping, event-driven programming, Web services, cloud computing, and principles of software engineering. I will also present some lessons learned and suggestions to improve the App Inventor as well as the course.


**Session B: Engaging Students with Apps for Social Good** *6th Floor Lecture Hall*

Arta Szathmary, Ellen Spertus, Stacy Christensen

***Arta Szathmary***

I volunteered at local middle school. 7th graders were working on a service learning project about the importance of native plants in the eco-stystem. They wanted an app to help people identify invasive plants. Out of the class of 18 students, 4 were chosen to complete this task. They learned quickly and completed the task to be included at a National group at the end of April. Besides the Invasive Plants app, they complete a "Plant Mash" and "Invasives Quiz".

***Ellen Spertus***

App Inventor was successfully used in a Mills College course, Technology for a Better World, in which students explored how information and communication technology (ICT) have greatly improved the lives of people in the developing world, such as by enabling micro-finance and increasing people's access to information about markets, health, and other important topics. This approach proved effective at motivating idealistic Mills students (mostly women) and at teaching both the content and context of computer science.

***Stacy Christensen***

The number of health education applications (apps) currently available for download is growing rapidly. MobiHealthNews.com reported a 78% increase in health related apps from February 2010 to November 2010, noting Android Apps as the fastest growing segment, with an increase of 155% alone. While there are many apps related to women's health issues, none focus extensively on Pap testing. This presentation provides an overview on a project where nursing knowledge combined with computer technology expertise to address an important health education need using MIT App Inventor. The result of this collaboration is the beta version of "MyPapp", a free and downloadable app currently available on the Android Market. "MyPapp" provides users with comprehensive information on Pap screening to enhance knowledge levels regarding this important health topic. Informal feedback has been very positive thus far. Plans are underway to test this app on Pap test knowledge levels in college women.


**Session C: STEM Engagement** *5th Floor Room 525*

Audrey Bennett, Tahani Zeid, Kelly Powers

***Audrey Bennett***

This presentation is about the prospective use of App Inventor with Culturally Situated Design Tools" (CSDTs: www.csdt.rpi.edu), an NSF-funded research project by TED presenter Ron Eglash. CSDTs are a suite of applets based on ethnocomputing: the computational and mathematical knowledge embedded in cultural designs such as cornrow hairstyles, Native American beadwork, Latino percussion rhythms, and urban graffiti. CSDTs allow students to use indigenous/vernacular algorithms and principles to simulate the original cultural designs, create new designs of their own invention, and engage in arts and performance activities which translate between cultural and scientific knowledge systems. Evaluations indicate statistically significant increase in both STEM achievement and attitudes toward STEM-based careers. In this presentation, I will discuss the ways in which the CSDT scripting interface can prepare students for using App Inventor, and some possibilities for porting CSDTs into mobile devices using App Inventor language and the role Boys and Girls Club high school students will play in this process.

***Tahani Zeid***

The mission of the Technovation Challenge is to promote women in technology by giving girls the skills and confidence they need to be successful in computer science and entrepreneurship. We aim to inspire girls to see themselves, not just as users of technology, but as inventors, designers, builders, and entrepreneurs in the technology industry. The Technovation Challenge just finished its third season using App Inventor with high school girls. In 2012, 520 girls from Boston, New York City, Los Angeles, and the San Francisco Bay Area worked in teams to build approximately 100 science-themed apps!

For 2013, we will scale-up the program to include thousands of girls worldwide using an online curriculum. Modeled after FIRST Robotics, we want teachers and girls to form Technovation Clubs at their high schools. The teams of girls will be able to participate using our online entrepreneurship and programming curriculum combined with App Inventor's tutorials.

***Kelly Powers***

Using AppInventor in the High School Classroom. Given our first year with AppInventor, we reflect on the growth that we have made in our program based on our 1rst year experience. We review what we have changed this year and report the success of our final project which has a format that allows students to earn points for planning, production and their final pitch. The theme of the student app is a game. We will share the project rubric, demonstrate examples of student work and share why we decided to change the format of the final project using experiences gained from a spring competition our students participated in called "Technovation Challenge".


**Session D: Computing for All** *6th Floor Multi-Purpose Room*

Krishnendu Roy, Ursula Wolz, Dave Wolber

***Ursula Wolz***

We have proposed to NSF TUES to build a video game in which students complete challenges (quests and puzzles) in App Inventor to proceed in the game. We have an architecture for integrating game play and learning goals. In this session we would appreciate critical (but friendly) feedback on the overall goals of this project and its initial design.

***Krishnendu Roy***

Our experience of using App Inventor for Android (AIA) involves activities ranging from summer camps for high-school students, to developing instructional materials for novice programmers, to using AIA in CS4HS workshop.

We organized summer camps for high schools students at Valdosta State University, in Valdosta, GA in summer of 2011. In these camps we used AIA (and Lego NXT) to introduce computing to students. While planning for our camps we designed several basic YouTube video tutorials guiding students through the process of creating apps.

This summer, we will organize a CS4HS workshop. Our workshop will be different from usual 3-days-long CS4HS workshops where teachers are exposed to a wide variety of topics. We will organize a training week for a small group of teachers where we will teach them basic programming using AIA and Lego NXT. After that training week, the teachers will come and instruct students during our summer camps. We believe this will enable the teachers to learn computing at a deeper level and enable reciprocal learning, hence increasing chances of classroom adoption and success.

***Dave Wolber***

David Wolber has taught App Inventor to humanities, business, and science students at the University of San Francisco since a Google Pilot in 2009. In this talk, he'll discuss what he's learned from the experience, the design of his course, and some topics he covers including persistent data and talking to the web.


**Session E: Online support for learning + Virtual Learning** *6th Floor Lecture Hall*
Karen Kear, Yu-Chang Hsu, Daniel Torres

***Karen Kear***
The UK Open University offers part-time study via e-learning and distance learning. The new module TT284 'Web Technologies' has approximately 600 students who are learning about technical aspects of web development at a distance over a period of nine months. The module includes learning resources and activities where students, working individually, use App Inventor to develop simple mobile apps. The students also carry out a development task using App Inventor as part of the module assessment

This talk describes the teaching, learning and assessment approach, and the experiences of teachers and learners using AppInventor in the module. It will explore the benefits and issues of using an interactive, visual programming environment with students who are working from their own homes with little or no face-to-face contact with teachers or other learners. It will also discuss the motivational aspects of learning to develop mobile web applications in this highly visual way.

***Yu-Chang Hsu***
I will share my experiences of how to facilitate mobile app design in an fully online course consisted of graduate students mostly with limited programming experiences. I will present the students' experiences of learning by doing and their reflective practice in a virtual learning community. The learning activities and scaffolding included: 1) developing practice apps with progressively advanced customizations; 2) testing and critiquing app customizations; 3) developing individual app design proposals; 4) prototyping and developing one's own apps; and 5) keeping app design journals for self-reflection and community learning. From the activities, I collected rich data to delineate the dynamic nature of the virtual learning community of mobile app design. I will share instructional implications, implementation suggestions, and challenges during my presentation.

***Daniel Torres***
We're currently developing a Latin American entrepreneurship community together with the Center for Mobile Learning. It spins around the immense potential of MIT App Inventor and will be focused on potential entrepreneurs willing to enter the App Economy. New MIT App Inventor curriculum is being developed and the community will open as soon as next october. We would love to share our thoughts with you!