



## IEEE-USA: An IEEEExtreme Example of Volunteerism and Local Engagement

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Milwaukee | 16 May 2015



## What is IEEEExtreme?

- ▶ IEEEExtreme is IEEE's premier programming competition, bringing thousands of students from around the world together into a 24 hour event
- ▶ IEEEExtreme is open to all undergraduate and graduate college students who are interested in becoming IEEE student members
- ▶ The competition is hosted virtually and simultaneously around the world, and competitors are required to be proctored by a local IEEE member and are often supported by a local IEEE Student Branch



## What makes IEEEXtreme unique?

- › IEEEXtreme is one of the largest competitive programming events in the world; 5,500+ participating students in 2014
- › IEEEXtreme always aims to be a welcoming and international community; we are open to any college student that wishes to join IEEE and compete—no matter their level of expertise, location, or university affiliation.
- › The quality of our competition is carefully cared for by hundreds of IEEE volunteers and our leadership team is one of IEEE's most exemplary volunteer committees



## Global Reach of Competition

### IEEEXtreme 8.0 Participating Countries

Rank	Country	Number of Teams Participating
1	India	456
2	United States	232
3	Sri Lanka	100
4	Tunisia	82
5	Canada	60
6	Greece	64

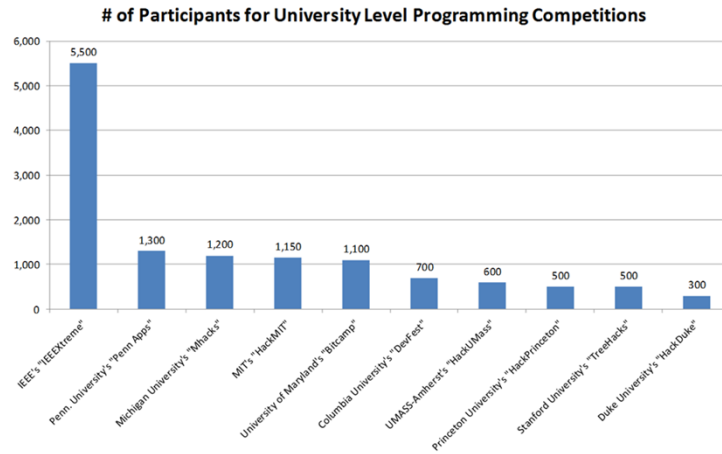
### IEEEXtreme 8.0 Top Countries

Rank	Country	Number of Teams in Top 100
1	Canada	11
2	China	9
3	United States	8
4	Belgium	6
5	Sri Lanka	5
6	Peru	5



# IEEEExtreme Numbers

IEEEExtreme 8.0 Compared to Recent Elite Hackathons



# A Sample of IEEEExtreme Participants



## What is the Impact of IEEEXtreme?

### Students

- Exposure to and networking with global programming community
- Receive team rankings relative to international competition
- Develop personal confidence in relation to personal coding skills
- Enjoy feedback on what skills are strong and what skills need development

### Proctors

- Exposure to and networking with global programming community
- Enjoy the opportunity to connect with and mentor students
- Observe and note differing types of challenging programming questions
- Aid their local collegiate computer science program's exposure and prestige

### Volunteers

- Exposure to and networking with global programming community
- Enjoy the opportunity to work with and give something back to coding communities
- Observe the volunteer efforts of others and emulate best practices
- Make a deeper connection to IEEE volunteer structures



## Engaging Students, Proctors, & IEEE Branches

- › There have been various exemplary efforts toward engaging students, proctors, and branches in the past few years:
  - Traditional marketing efforts
  - Social media outreach
  - PR ambassador program
  - Press kits and local proctor guides
  - Partnership with IEEE Academic
- › IEEEXtreme's success depends on the engagement & efforts of hundreds volunteers around the globe



## Traditional Marketing Efforts

- › In a traditional sense, IEEEExtreme promotion is a marketing & public relations challenge
- › IEEEExtreme team pursues a number of tried & true strategies:
  - Standardized branding and logo
  - Promotional flyers for online & local advertising
  - Email campaign to all IEEE student members
  - Announcements in “What’s New for Students” newsletter
  - Partnerships with IEEE publications (Potentials & Institute)
- › There is always more that can be done...



## Volunteer Created Branding



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24 October 2015

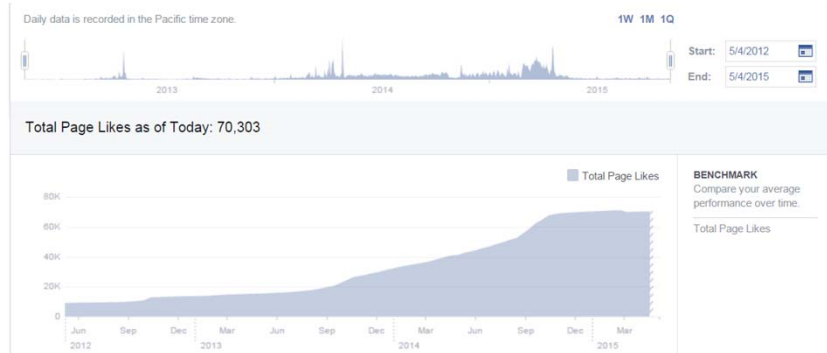
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- › New logo and branding developed this year
  - Complements of the volunteer efforts of Dinko Jakovljevic (IEEEExtreme PR Co-Lead & Founder of IEEEmadC)



# Social Media Outreach

- › IEEEExtreme embraces Facebook & Twitter as our main platforms of community engagement
  - This recognizes the social media practices of youth audience



# Engaging Content Keeps an Community's Attention

Reach: Organic / Paid Post Clicks Likes, Comments & Shares

Published	Post	Type	Targeting	Reach	Engagement	Promote
03/30/2015 11:19 pm	Your moment of zen... <a href="http://i.imgur.com/Vy9zR6J.png">http://i.imgur.com/Vy9zR6J.png</a>			62K	8.4K 492	Boost Post
03/12/2015 9:34 am	26 years ago today Tim Berners-Lee submitted a proposal to CERN for a distributed information			26.2K	1K 769	Boost Post
04/20/2015 9:48 am	How a 1960's computer and two sentences overturned 200 years of mathematical precedent.			22.5K	967 565	Boost Post
03/05/2015 3:56 pm	Stack Overflow: How we upgrade a live data center <a href="http://blog.serverfault.com/2015/03/05/how-we-">http://blog.serverfault.com/2015/03/05/how-we-</a>			18.1K	557 156	Boost Post
03/09/2015 10:23 am	Machine Learning for Programming <a href="http://www.infoq.com/presentations/machine-">http://www.infoq.com/presentations/machine-</a>			18.1K	844 364	Boost Post
02/10/2015 1:49 pm	"The Parable of the Two Programmers" <a href="http://www.csd.uwo.ca/~magi/personal/humour/Com">http://www.csd.uwo.ca/~magi/personal/humour/Com</a>			17.5K	523 68	Boost Post
04/03/2015 10:11 am	I made an NES emulator. Here's what I learned about the original Nintendo.			16.4K	579 112	Boost Post



## PR Ambassador Program

- ▶ Introduced last year, PR Ambassador program aims to have local IEEEExtreme ambassadors in every IEEE region
  - Headed by Co-PR leads Prasanth Mohan & Dinko Jakovljevic
- ▶ Ambassadors are meant to aid local organization, advertising, and networking
  - A decentralized approach to community engagement
  - Allows for greater opportunities for volunteer engagement and buy-in
- ▶ Fairly successful in some regions (8, 9, & 10)
- ▶ Challenges exist in identifying Ambassadors in North America (Regions 1-7)



## Local Press Kits & Proctor Guides

- ▶ Also introduced last year were press kits and proctor guides to help guide the local advertising and implementation of IEEEExtreme
- ▶ Press kit meant to provide factual and promotional materials in a single flyer
- ▶ Proctor guide offers succinct direction on competition rules, logistics, and facilities checklist
- ▶ Difficult to measure success, but effort is seemingly low-resource & worthwhile



## IEEEXtreme Academic Community

- › In the coming months IEEEXtreme is partnering with IEEE Academic to create original academic content, focusing on past Xtreme problem sets
- › Pursued with a recognition that there are hundreds of IEEEXtreme teams that are highly engaged but unable to solve competition problems—a problem of educational equity
- › Efforts are in early stages but ultimate goal is to have videos developed, produced, and shared by IEEE volunteers

– IEEEXtreme Academic Collaborators



## An IEEEXtreme Community

- › Ultimately, IEEEXtreme's success is a reflection of genuine efforts from many sources
  - Local IEEE branches & proctors
  - IEEEXtreme Executive Committee
  - Judges and Quality Assurance volunteers
  - PR ambassador program
  - Competition sponsors





## Local IEEE Branches and Proctors

- Local branches and volunteers provide a lot of support that the IEEEExtreme committee & staff couldn't possibly provide to 5,500+ global students
  - Facilities, coordination, promotion, & support
  - Food and drinks



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## IEEEExtreme Executive Committee

- IEEEExtreme efforts are guided by a standing executive committee, falling under the direction of IEEE Student Activities Committee
- Various volunteer and staff positions:
  - Committee Lead-Dimitrios Lyras
  - Committee Past Lead-Sinan Alsheikh
  - Judges & Industry Lead-Jeremy Blum
  - PR Leads-Prasanth Mohan & Dinko Jakovljevic
  - Staff support:
    - Student Program Coordinator-Mark Pelham
    - Manager of Young Professional Programs-Lisa Delventhal
    - Member Benefits Marketing Manager-Nick Lehotzky

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## Judges & Quality Assurance

- ▶ The competition is highly dependent on the extraordinary work of volunteer Judges and Qa's
  - IEEEExtreme problem sets are developed by dozens of volunteer judges and QAs.
  - There is a wide range of problem difficulties and topics; to allow a variety of students to genuinely participate, while also sorting out the most talented teams.
- ▶ Exemplary IEEEExtreme 9.0 Judges:
  - Dario Schor-Software Engineer at Space Division of Magellan Aerospace
  - Oded Margalit: Computer Science Researcher at IBM
  - Anoop Thomas Mathew: Head of Technology at Profoundis
  - Marco Della Vedova: Assistant Professor at Catholic University of the Sacred Heart



## Example IEEEExtreme Problem Statement

### Run Me

This problem seems quite easy: it seems that we are giving you the answer...All you have to do is supply the output of our program on the given input.

#### Input

A string of characters, ending with a dot ('.').

#### Output

Your program should print the output of an MS-DOS 8086 assembly program p.com on the given input.

Our program (in hex dump) is:

```
BF 00 04 BE C0 00 56 31 C9 B4 00 CD 16 3C 2E AA
E0 F7 F7 D1 29 D2 89 CD 58 53 FE 07 75 03 42 EB
F9 BF 00 02 89 F9 89 F8 F3 AA 89 FE AC 89 C3 FE
07 80 FB 2E 75 F6 FE 0F 5E 56 89 E9 AC 89 C3 FE
0F 7C D5 E2 F7 42 5E 56 89 E9 F3 A6 75 CA 5D 92
D4 0A E8 00 00 86 C4 04 30 CD 29 C3
```

#### Sample Output 1

5.

#### Sample Output 1

01

#### Sample Output 2

34.

#### Sample Output 2

02



## PR Ambassador Program

- › A broad international effort to evangelize IEEEExtreme to Universities, Student Branches and Student Members
- › PR ambassadors assist student members in hosting IEEEExtreme at their respective student branch and also supporting non student branch members to finding venue
- › PR ambassadors host seminars and drive IEEEExtreme programming competition participation in Universities/Colleges; creating general awareness about the competition
- › Identify and assist students that require support and guidance on any details relevant to IEEEExtreme



## IEEEExtreme Success to Emulate

- › Roles and responsibilities are quite diffuse
  - Partnership between staff, volunteers, & local branches
- › Social media is key to (cost-effective) youth engagement
  - Focus on promoting & sharing interesting topics/ideas
- › Executive committee provides stability to year-to-year efforts, but also rotates positions after a few cycles to bring in fresh perspectives
  - Promotes existing volunteers who are engaged and eager
- › Local branches pick up a lot of the logistics & support needs
  - Proctors deserve recognition and support for their special efforts

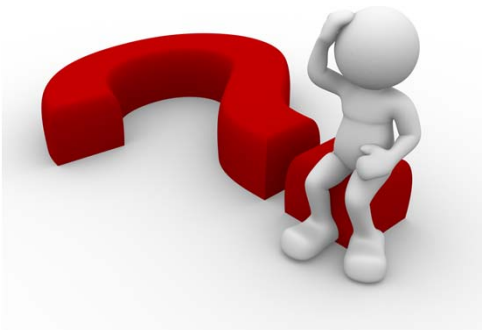


## Where IEEEXtreme is Looking to Improve

- ▶ Engagement & participation from students in North America and East Asia (China, Japan, Taiwan, & South Korea)
  - PR ambassadors in these regions are needed!
- ▶ Engagement & participation from young women programmers around the world
- ▶ Improving the academic and networking value provided to IEEEXtreme participants
- ▶ Exploring ways to provide more engagement and appreciation to local proctors
- ▶ Aiming to reach 10,000 student competitors in the coming years



## What's On Your Mind?



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