



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

Jeremy Blum
IEEEExtreme Judges and Industry Lead
IEEE USA
Milwaukee | 16 May 2015

IEEE★USA 

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

IEEE★USA 

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 |

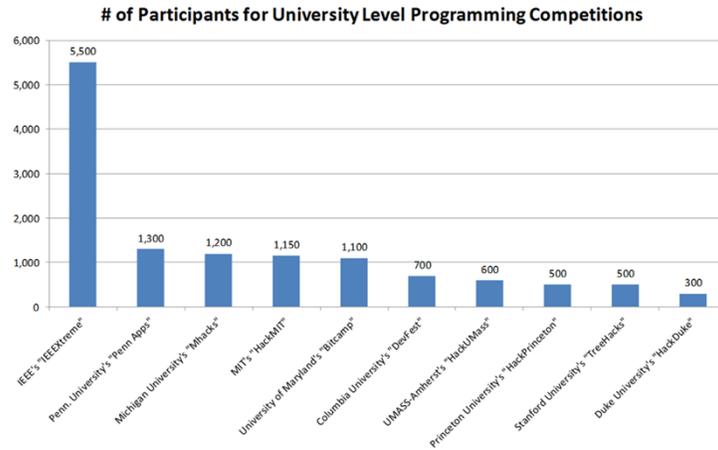
IEEEXtreme 8.0 Top Countries

| 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



Follow IEEEExtreme      reddit



24 October 2015

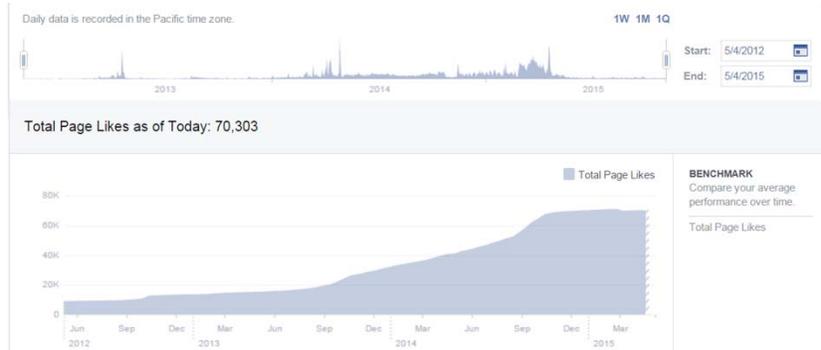
at 00:00:00 UTC

- › 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... http://i.imgur.com/Vy9zR6J.png | | | 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 http://blog.serverfault.com/2015/03/05/how-we- | | | 18.1K | 557 156 | Boost Post |
| 03/09/2015 10:23 am | Machine Learning for Programming http://www.infoq.com/presentations/machine- | | | 18.1K | 844 364 | Boost Post |
| 02/10/2015 1:49 pm | "The Parable of the Two Programmers" http://www.csd.uwo.ca/~magi/personal/humour/Com | | | 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



IEEE★USA



IEEE

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

IEEE★USA

IEEE

Judges & Quality Assurance

- ▶ The competition is highly dependent on the extraordinary work of volunteer Judges and Qa's
 - IEEEXtreme 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 IEEEXtreme 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 IEEEXtreme 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?



Jeremy Blum
blum@psu.edu

IEEEXtreme Team
IEEEXtreme@ieee.org
or
www.facebook.com/IEEEXtreme

