

NOTES

USENIX Member Benefits

Members of the USENIX Association receive the following benefits:

Free subscription to *login.*, the Association's magazine, published six times a year, featuring technical articles, system administration articles, tips and techniques, practical columns on such topics as security, Perl, networks, and operating systems, book reviews, and reports of sessions at USENIX conferences.

Access to *login.* online from December 1997 to the current month:
www.usenix.org/publications/login/

Access to videos from USENIX events in the first six months after the event:
www.usenix.org/publications/multimedia/

Discounts on registration fees for all USENIX conferences.

Special discounts on a variety of products, books, software, and periodicals: www.usenix.org/member-services/discount-instructions

The right to vote on matters affecting the Association, its bylaws, and election of its directors and officers.

For more information regarding membership or benefits, please see www.usenix.org/membership/or contact office@usenix.org. Phone: 510-528-8649

USENIX Board of Directors

Communicate directly with the USENIX Board of Directors by writing to board@usenix.org.

PRESIDENT

Brian Noble, *University of Michigan*
noble@usenix.org

VICE PRESIDENT

John Arrasjid, *VMware*
johna@usenix.org

SECRETARY

Carolyn Rowland, *National Institute of Standards and Technology*
carolyn@usenix.org

TREASURER

Kurt Opsahl, *Electronic Frontier Foundation*

DIRECTORS

Cat Allman, *Google*

David N. Blank-Edelman, *Northeastern University*

Daniel V. Klein, *Google*

Hakim Weatherspoon, *Cornell University*

EXECUTIVE DIRECTOR

Casey Henderson
casey@usenix.org

Team USA Brings Home the Gold from IOI 2014

Brian C. Dean, Associate Professor, School of Computing, Clemson University, Director, USA Computing Olympiad

Watching the live scoreboard for a five-hour competitive programming contest can be, as one might imagine, somewhat dull. Unless Scott Wu is part of the contest, that is. This past summer, Scott and three other USA team members competed at the 26th annual International Olympiad in Informatics (IOI) in Taipei, Taiwan—the world's most prestigious computing contest at the high-school level. Although the contest takes five hours on each of two separate days, Scott finished day one with a perfect score in only two hours, and day two with a perfect score in only three hours—an absolutely remarkable performance beyond what anyone at the event, including the judges, had anticipated. Aside from Scott's perfect score and first-place finish, his three other teammates, Steven Hao, Andrew He, and Joshua Brakensiek, all earned gold medals, placing in the top 7% of more than 300 competitors from roughly 80 countries; China was the only other country receiving four gold medals. It was perhaps the best showing ever for team USA over more than two decades of participation in the IOI.

The road to the IOI and programming gold started many years ago for the members of team USA 2014, with participation in the USA Computing Olympiad (USACO). The USACO, a grateful recipient of USENIX sponsorship, provides online programming competitions and algorithmic training materials in which thousands of high-school students take part. Beginning students who are just learning to program start out in our bronze division, where problems require minimal algorithmic training beyond the ability to sort. Top performers in the bronze

division are promoted to the silver division, with problems that help students learn about standard algorithms and data structures (a sample problem is included at the end of this article for those interested). With sufficient effort, students then graduate to the gold division, with problems that would challenge even graduate-level students of computer science, requiring sophisticated algorithmic techniques, clever insight, and plenty of coding experience to implement properly. Based on the result of six monthly programming contests held throughout the academic year, the USACO identifies the top two dozen high-school computing students in the USA and invites them to a rigorous summer “training camp” at Clemson University for additional instruction. The top four from this camp are selected to represent the USA at the IOI.

Of the USA team members competing this year at the IOI, Scott had attended the USACO summer training camp for the past four years, Steven and Joshua for the past three years, and Andrew for the past two years. The camp experience is designed to benefit first-time attendees as well as veterans such as these students, with first-timers receiving a more lecture-centric curriculum, and returning students experiencing a curriculum based more on practice competitions. Beyond the core instructional activities at camp, finalists take part in recreational activities, excursions, enrichment lectures, and innovative computational “game” challenges. For example, this summer students worked in teams to write programs that would bid against each other in a simulated prediction market that would reward the programs best able to predict the winner of a game of chess unfolding in real time. Camp instructors are mostly USACO alums who are now undergraduate and graduate computer science students at top universities, who provide mentorship not only in computational problem solving, but also in the exciting opportunities for advanced study in a variety of computational disciplines. In short, the USACO helps to identify, train, and inspire our next generation of top computing innovators.

The IOI moves from country to country each year, with each host country offering a different unique assortment of activities and cultural excursions during the week-long event. All members of the USA delegation to the 2014 IOI in Taipei, Taiwan, had a wonderful experience, including our four team members, team leader Brian Dean, and deputy team leader and veteran USACO coach Richard Peng. The contest venue was directly adjacent to the Taipei 101 skyscraper—one of the tallest buildings in the world and also, fittingly, a building whose number looks just like “IOI”! During the week of the IOI, we embarked on several cultural excursions, experienced the very best of Taiwanese cuisine, and made fast friends with like-minded peers from all over the world. Combined with our gold medal performance, it was a truly memorable event.

While the USACO is one of the very few organizations in the USA that supports advanced computing at the high-school level, its mission also involves supporting pre-college computing at all levels (a mission of ever-increasing importance, given the disparity between the tremendous demand world-wide for top computing talent compared with the relatively lackluster K-12 infrastructure for teaching computing in the USA). One of our goals is to expand our reach by offering educational materials and contests that can benefit an even wider range of students, and sponsorship from organizations like USENIX is crucial to helping us reach this goal. By continuing to grow our base of participation, we are confident that we will send ever-more talented teams to represent the USA at future IOIs in Kazakhstan (2015), Russia (2016), Iran (2017), and Japan (2018).

For those interested, here is a sample problem (at the silver level) from one of our USACO contests this past season: Suppose you are making a road trip with two navigationally inclined individuals, both of whom are using GPS applications on their phones to help find a good route to the destination. Unfortunately, both applications are using different underlying maps, so they have

differing opinions of the best route to take. Whenever you deviate from the preferred route of one of the GPS applications, it complains loudly that it must recalculate a new route. Given the mapping data for each GPS in a convenient format, your task is to find a route to the destination that results in a minimum number of complaints, collectively, between both GPS units.

For more information about the USA Computing Olympiad, please visit our Web site at <http://www.usaco.org>.

Thanks to Our Volunteers

by Casey Henderson, USENIX Executive Director

As many of our members know, USENIX’s success is attributable to a large number of volunteers, who lend their expertise and support for our conferences, publications, good works, and member services. They work closely with our staff in bringing you the best there is in the fields of systems research and system administration. Many of you have participated on program committees, steering committees, and subcommittees; many have also contributed to this magazine. The rest of the staff and I are most grateful to you all. I would like to make special mention of some people who made particularly significant contributions in 2014.

Although I include them in the list below, I’d like to say an extra special thanks to Niels Provos and Margo Seltzer, who both completed eight years of service on the USENIX Board of Directors this year, reaching the term limit. Both have been dedicated and active Board members for their entire terms, pushing USENIX forward as an organization and giving generously of their time. Following the conclusion of their terms, they both continue to contribute to USENIX as volunteers in various efforts.

Program Chairs

Bianca Schroeder and Eno Thereska: 12th USENIX Conference on File and Storage Technologies (FAST ’14)

Ric Wheeler: 2014 USENIX Research in Linux File and Storage Technologies Summit

Ratul Mahajan and Ion Stoica: 11th USENIX Symposium on Networked Systems Design and Implementation (NSDI '14)

Sabrina Farmer, Andrew Fong, and Fernanda Weiden: SREcon14

Dinah McNutt: 2014 USENIX Release Engineering Summit (URES '14) and 2014 USENIX Release Engineering Summit West (URES '14 West)

Chris St. Pierre: 2014 USENIX Configuration Management Summit (UCMS '14)

Jie Liu (General Chair); Sharad Singhal and Bhuvan Ugaonkar (Program Co-Chairs): 9th International Workshop on Feedback Computing

Michael A. Kozuch and Minlan Yu: 6th USENIX Workshop on Hot Topics in Cloud Computing (HotCloud '14)

Garth Gibson and Nickolai Zeldovich: 2014 USENIX Annual Technical Conference (USENIX ATC '14)

Xiaoyun Zhu (General Chair); Giuliano Casale and Xiaohui (Helen) Gu (Program Co-Chairs): 11th International Conference on Autonomic Computing (ICAC '14)

Steven Swanson: 6th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage '14)

Jeanna N. Matthews and Sherry Moore: 2014 USENIX Women in Advanced Computing Summit (WiAC '14)

Kevin Fu: 23rd USENIX Security Symposium (USENIX Security '14)

Walter Mebane and Dan S. Wallach: 2014 Electronic Voting Technology Workshop/Workshop on Trustworthy Elections (EVT/WOTE '14); also Editors-in-Chief of the *USENIX Journal of Election Technology and Systems (JETS)*

Chris Kanich and Patrick Lardieri: 7th Workshop on Cyber Security Experimentation and Test (CSET '14)

Jed Crandall and Vern Paxson: 4th USENIX Workshop on Free and Open Communications on the Internet (FOCI '14)

Avi Rubin and Eugene Vasserman: 2014 USENIX Workshop on Health Information Technologies (HealthTech '14)

Zachary N J Peterson: 2014 USENIX Summit on Gaming, Games, and Gamification in Security Education (3GSE '14)

Michael Bailey and Fabian Moore: 2014 USENIX Summit on Hot Topics in Security (HotSec '14)

Sergey Bratus and Felix "FX" Lindner: 8th USENIX Workshop on Offensive Technologies (WOOT '14)

Jason Flinn and Hank Levy: 11th USENIX Symposium on Operating Systems Design and Implementation (OSDI '14)

Flavio Junqueira and Keith Marzullo: 10th Workshop on Hot Topics in System Dependability (HotDep '14)

Yuvraj Agarwal and Karthick Rajamani: 6th Workshop on Power-Aware Computing and Systems (HotPower '14)

Ada Gavrilovska and Anthony D. Joseph: 2014 Workshop on Supporting Diversity in Systems Research (Diversity '14)

Ken Birman: 2014 Conference on Timely Results in Operating Systems (TRIOS '14)

Kaoutar El Maghraoui and Gokul Kandiraju: 2nd Workshop on Interactions of NVM/Flash with Operating Systems and Workloads (INFLOW '14)

Nicole Forsgren Velasquez: 28th Large Installation System Administration Conference (LISA14)

Kyrre Begnum and Charles Border: 2014 USENIX Summit for Educators in System Administration (SESA '14); also Chief Editors of the *USENIX Journal of Education in System Administration (JESA)*

Invited Talks/Special Track Chairs

John Strunk: Tutorial Coordinator at FAST

T.S. Eugene Ng and Amar Phanishayee: Poster Session Co-Chairs at NSDI

Jaeyeon Jung: Deputy Program Chair at USENIX Security

Sandy Clark, Matthew Green, Thorsten Holz, Ben Laurie, Damon McCoy, Jon Oberheide, and Patrick Traynor (Chair): Invited Talks Committee at USENIX Security

Franziska Roesner: Poster Session Coordinator at USENIX Security

Allen Clement and Roxana Geambasu: Poster Session Co-Chairs at OSDI

Patrick Cable, Doug Hughes, and Matthew Simmons: Invited Talks Coordinators at LISA

Lee Damon: Lightning Talks Coordinator at LISA

Cory Lueninghoener: Workshops Coordinator at LISA

Tom Limoncelli and Matthew Simmons: Tutorial Coordinators at LISA

Paul Krizak (Chair) and Chris McEniry: LISA Lab Coordinators

Branson Matheson and Brett Thorson: LISA Build Coordinators

Other Major Contributors

Cat Allman, John Arrasjid, David Blank-Edelman, Sasha Fedorova, Daniel V. Klein, Brian Noble, Kurt Opsahl, Niels Provos, Carolyn Rowland, Margo Seltzer, Dan Wallach, and Hakim Weatherspoon for their service on the USENIX Board of Directors

Eric Allman, John Arrasjid, and Niels Provos for serving on the Audit Committee

Brian Noble and Cory Lueninghoener for serving on the Awards Committee

Brian Dean, team leader, and Richard Peng, deputy team leader and veteran coach, for this year's USA Computing Olympiad, co-sponsored by USENIX

Eddie Kohler for his HotCRP submissions and reviewing system

Tadayoshi Kohno for organizing the Work-in-Progress Reports at USENIX Security '14

Jacob Farmer of Cambridge Computer for his sponsorship of the traveling LISA Data Storage Day series and for organizing the Storage Pavilion and Data Storage Day at LISA14

Hugh Brown, Katherine Daniels, and Mark Lamourine for blogging about USENIX and LISA14 activities