



ics

inspiring Computer Science students

Editorial

Welcome to iCS! In this special edition we focus on the Imagine Cup, which is a student software competition run by The Microsoft Corporation.

It had modest beginnings back in 2003 with fewer than 1,000 student competitors, but the Imagine Cup has grown to more than 325,000 registered students last year alone! Teams of students enter the competition. They usually have a team name, and also a named product that they will produce. There are entries in various categories such as Software Design, Embedded Development, Game Design, Digital Media and IT Challenge.

The Imagine Cup is a way for students to use creativity, imagination, and brainpower to open up a world of opportunities after graduation. And for you to make a name for yourself in the world of technology. Some past competitors have gone on to secure a great internship or the perfect job, while others have started their own companies based on their Imagine Cup project and it's all in the name of helping to solve the toughest problems using technology.



The Imagine Cup takes you to great places...

This year, the Imagine Cup Worldwide Finals will be held in New York City, USA. You can read an article by Ben Nunney of Microsoft which gives some background to the competition and how a team competes.

In 2010, two teams from Leicester reached the finals of the UK competition. Read about their

experiences as they prepared for and entered the competition, take a look at the teams, and find out what they achieved.

We hope that you will be inspired to follow suit. If so, then the next step if you are at school or college is to apply for a University degree in Computing or Computer Science. We wish you good luck!





... and you get to meet great people

**THE WORLD'S
PREMIER
STUDENT
TECHNOLOGY
COMPETITION**

The Imagine Cup 2011 – Imagine what you can do

Students are the future. There's no getting away from the fact that, especially in the world of technology, once a student has graduated there's a world of opportunity at their feet. But why wait until graduation to make an impact?

When you think of Microsoft, you might not think about things like solving world hunger. That's where you come in – we're imagining a world where, by helping students get ahead of the pack and release their potential, we can work together to solve some of the world's toughest problems.

Welcome to the Imagine Cup, the world's premier student technology competition. It's a simple idea really – we give students a stage to shine on, and it's down to them to imagine ideas & solutions that use technology to solve some of the biggest issues facing the world today. Winning ideas earn their teams a place at a worldwide final event, held in New York, where you'll get to showcase your ideas to other competitors, industry leaders, and government officials alike.

Sounds good, right? Let me tell you what you need to do to be a part of this amazing journey...

It all starts with an idea. Think about how you might change the world using technology – whether it's solving drought, helping locate lost refugees, or working out a system to get more food to the people who need it.

Once you've had an awesome idea, entering the competition is really easy – all you have to do is go to www.imaginecup.com and click 'Register Now'.

From there, surround yourself with two or three other people who are passionate and have a great imagination. Work together to flesh out the idea you've had, going into detail around what the problem is and how you're going to solve it.

That takes you up to the UK first round submission deadline – you and your team need to submit your brief on paper on or before 10th December 2010. At that stage, we'll look over the best entries from across the UK and select 15 people to go through to the next round.

The next round is where the project starts to come together – we'll give you someone from the industry to work with, and all the resources that you need to make your project come to life. You and your team then have the freedom to create the future, based on the brief you gave us.

In February, you send us a video of your project so far, and we'll select 6 teams who have the best solutions to go through to the UK final. You then have a couple more months to carry on working with your mentors to create a project of globally epic proportions.

Come April, those 6 UK finalists will get the chance to present their ideas to a panel of judges and compete for the opportunity to go, all expenses paid, to the worldwide finals in New York.

Now I guess you're wondering what's in it for you?

The Imagine Cup is an immense opportunity for you to get real-world

experience of creating a software solution from start to finish. It's a chance to work on something amazing, something that you've created from your imagination, and it's a chance to put your work in front of some of the biggest and best people in the technology industry.

There are loads of rounds to suit everyone – whether you're a software developer, you work on embedded devices, create video games or are more of a server person. You can take your skills, further your knowledge, and impress the people who count.

You also get the chance to win some fantastic prizes, from an all-expenses-paid trip to the worldwide finals to netbooks, phones, games consoles and software.

The Imagine Cup needs passionate students who want to change the world – sign up today and be part of something amazing!

Ben Nunney

Academic Developer Evangelist at Microsoft

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got to meet with Dr. Stephan Reiff-Marganiec who gave us some guidance on how to approach the idea from a technical perspective. During this time we first developed a proof of concept to show case our idea and we gradually progressed to a final working solution. This solution allowed passengers not only to save CO₂, but also to raise awareness on how they could have saved CO₂ on a previous flight they took.

The idea seemed solid and we also held several meetings with Professor Thomas Erlebach who mentored us through the whole process. Professor Erlebach also arranged for us to meet with Neil Radford from the University's Enterprise and Business Development Office, who gave us some tips for our project from a business viability standpoint.

The day came when we heard we got to the UK finals and we were invited to go to Microsoft's offices in Reading to present our idea to a panel of judges. Our idea wasn't picked as one of the best in the end but it was still a very nice experience. We still got some technological swag, courtesy of Microsoft, and the chance to hear about and play with yet to be released Microsoft technologies!

University of Leicester 2010 – Team WeWin

As two Microsoft Student Partner Alumni, Monica and I had long before heard about the Microsoft Imagine Cup. It was in casual conversation that Monica almost jokingly suggested that we participate. After some discussions we agreed that we could give it a try.

Just a few days after deciding to participate, we were still one member short. We needed someone hard-working and dynamic and this is where Jamal came in. Jamal shared an MSc module with Monica and she thought he would be a good addition for our team. With this, we had finally formed our team: Monica, me (Tiago) and Jamal.

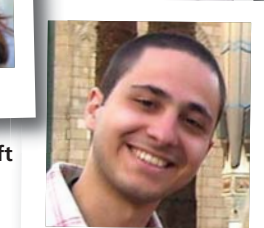
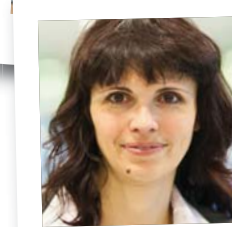
We had to come up with an ingenious idea for our project. To participate in the Imagine Cup 2010, the idea must address one of the eight Millennium Development Goals and it must use technology to help one of these causes. We bounced some ideas off each other and we came up with a theory that we could vastly reduce air travel CO₂ emissions by optimizing the way people travel. The best part about it was that if we were to scale this solution to every airline in the world, the gains would be tremendous and both the environment and the airlines would benefit greatly.

For a while we held meetings to discuss the preliminary submission and it took a while for us to actually understand the whole scope of what we were aiming to do. The Department was very helpful and we



Left to Right: Monica Abrudan, Jamal Kaabi-Mofrad, Tiago Espinha

University of Leicester 2010 – Team Mindpoint



Main picture from left to right: Nikola Kosev, Raya Yunakova, Kiril Rusev, Dilyan Rusev, Milena Lazarova

MindPoint consists of four highly motivated students and one mentor, who participated in the Imagine Cup for two consecutive years. The first time they competed in Bulgaria, where they won the national finals in the Software Design category and the year after they were ranked second among the top teams in the United Kingdom, in the same category.

What brought the team together was the idea to create a product that not only has social significance, but is also capable of reaching its target users and making a difference in their lives. Thus, Envision was born. It is a software system, aimed at improving the educational experience for both teachers and students in primary schools. To achieve this, the system provides teachers with a way to make lessons more attractive to students by ensuring active student participation throughout the classes. It is also designed to be cost effective, requiring only one computer and one projector for the whole classroom and one mouse for every student.

Envision has been developed into three different modules – presentation, administration and community web site, each of which is serving a specific purpose. The presentation module is used in class by the teacher in order to present the pre-created lessons to the students. Those lessons are created by the teacher using the administration module. They can contain several types of screens, most of which provide students with the ability to interact with the system in terms of completing competitive and collaborative tasks. The community web site allows teachers to share lessons between each other. Parents and students can view the points which the student has earned in class as well as any additional feedback if one is provided. The three modules complement each other to provide the users with the necessary flexibility to achieve remarkable results. More information can be found at www.nimero.com.

Envision was presented in both Imagine Cup competitions and received extremely positive feedback from all the

judges that were assessing it and from top-level managers in Microsoft, like Ray Ozzie, Chief Software Architect and Jon Perera, General Manager – Education Strategy. These reactions motivated MindPoint and encouraged them to continue the development of the product and after the worldwide finals in Cairo in 2009, they registered their own company, by the name “Nimero”, whose primary goal is to bring Envision to its users.

For the past year Envision has been approved in 3 Bulgarian schools and is now being used in more than 30 schools in Bulgaria and across Europe. In fact the impression which MindPoint made was so strong that their work was given as an example of a success story at the 2010 finals in Warsaw. With the enthusiasm, demonstrated by teachers, children and their parents, MindPoint has no doubt that soon Envision will become an important factor in many people’s lives and will bring us one step closer to achieving the goals set out by the Imagine Cup to “solve the world’s toughest problems”.

If you would like to write to us with questions, comments or other matters concerning iCS, please do so at ics@mcs.le.ac.uk. It may not be possible to reply to all correspondence, but whenever we are able to we will do so. To find out more about the Department of Computer Science please visit www.cs.le.ac.uk

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