The Ring

Ring news

The results of the careers questionnaire reflect the times.

Annual Dinner

2012 will be quite a year: the Olympic Games; UEFA Euro 2012; the US elections. However, closer to home, the Computer Laboratory will be celebrating its 75th anniversary while the Cambridge Computer Lab Ring will turn ten years old.

The Ring will be marking both anniversaries at Queens' College on Monday March 26th. The Old Hall certainly is a fitting venue, and I hope you'll come along, raise a glass and join the celebrations.

Careers questionnaire

Many thanks to all those who completed the careers questionnaire. The results were interesting and reflect the change in the UK's economic situation since 2006 when last we ran the survey.

Back in 2006, UK GDP growth was 2.7%, while the unemployment rate was 5.1%. Respondents obviously felt pretty sanguine as nobody cited long-term security as one of the three reasons for choosing either their first or most recent jobs. This compares with the latest survey's results which show that 24% gave long-term security as a motive for choosing their current jobs. This is, perhaps, not surprising given barely positive GDP growth and an unemployment rate of 8.3%. Economic uncertainty may also be a factor in the increase in importance of the reputation of the organisation. Back in 2006, only 14% of respondents mentioned this as an important reason for their employment choice, compared with a figure of 30% now.

Reflecting the deterioration in the employment situation, 18% stated that one of the key reasons for choosing their first job was that it was the only job they were offered. This is in stark contrast with 2006 when nobody gave this as a motivation.

One of the other marked changes is the importance of money in the choice of job. In 2006, the financial package was the most popular motive for choosing a job. It is heart-warming to see that it has now been overtaken by "the people with whom I would be working" and "the training and development opportunities".

There was just one question which elicited similar responses in both 2006 and 2011. When asked, "assuming equality of job opportunities between Cambridge and other areas, what would have been your preference for your first permanent job location?" 41% cited Cambridge. The preference for London was slightly higher at 29% compared with 22% in 2006, while preference for the rest of the UK just pipped the US.

NOTICE

of the Annual General Meeting of the Cambridge Computer Lab Ring

Monday 26th March 2012

In LT1, William Gates Building

at 6.00pm

AGENDA

1. Minutes of 2011 AGM
2. To receive and approve the financial statements
3. Council membership
   • Retirements of appointed members
   • Nominations for Council membership
   • Elections to the Council
4. Chairman's Report
5. Any other business

Who's who

James Brady (F BA05) is CTO of Trigger, a company he co-founded with fellow Ring member Amir Nathoo in 2008. Trigger is the easiest and fastest way to create apps.

Nick Brasier (CHR Dip86) was in the Great Britain team that won the World Long Range Rifle Championships in Brisbane, Australia. The GB team beat teams from South Africa, the US, Australia, Canada and

The Great Britain Palma Rifle Team. Nick Brasier is on the back row, fourth from the right.

New Zealand. Also called the Palma Match, the World Championship is the most prestigious event in the full-bore target rifle shooting world, and is held every four years. The next championship will be held in the US.

David Cleevely (PhD82) is a non-executive director at Neul, a new mobile wireless data service provider which will deliver the first global wireless network specifically designed for machine-to-machine communications.

Peter Cowley (F MA77) has had a busy six months as Martlet's investment director. Martlet, the Marshall Group's corporate angel venturing division, has committed over £250,000 for investment in its first six

months. Five companies have been backed and Peter expects to commit to a further four or five during this calendar year. Those Ring members with a pilot's license may be interested in one of Martlet's investments, e-Go, the luxury aircraft designer. E-Go aims to create an exceptionally stylish and exciting leisure aircraft that will meet the new de-regulated rules in the UK, LSA in the US and ELA in Europe. It will be available as a basic kit, quick-build kit and complete. The most recent company to receive funding from Martlet (as well as Cambridge Capital Group and Cambridge Angels) is Arachnys, which consolidates valuable business information from emerging markets, helping companies increase opportunities and reduce risk in complex but attractive markets, including India, China and Russia.

Neeral Dodhia (R BA10) is working in the graduate scheme at Deutsche Bank (see box).

Meurig Freeman (PEM BA04) works at Gordian Knot, where he is a senior developer.

Sobia Hamid (M PhD11) has founded Data Insights, a new Cambridge monthly meet–up group for people interested in all aspects of data. Data Insights is a multidisciplinary group welcoming all backgrounds, including scientists, geeks, engineers, statisticians, philosophers, economists, entrepreneurs, or just pure enthusiasts. Meet–ups are informal and friendly and held on the first Thursday of the month.

Neeral Dodhia talks about his experiences as a recent graduate

I'm working for Deutsche Bank, in its technology department. I'm currently on rotation, coming to the end of the graduate scheme, in a development team for one of the bank's risk engines. The summer before graduating I completed an internship with Deutsche which gave me an insight into what it was like. In addition to this, I chose to join the bank because of my interest in finance and the graduate programme it had to offer. The training programme is global so you get to meet people from all over the world, and it was a good way to pick up some useful skills before entering the workplace proper. In addition, the support network (peers, mentor, buddy etc.) has proved useful in adjusting to working life.

During my two rotations I have worked in very different teams, leading to different experiences. Neither is what I expected, probably because I didn't really know what to expect! The work can be quite fun at times but, as with large companies, there is also a fair amount of paperwork to go through. My first rotation, which was chosen for me, was not very challenging, but I have enjoyed my second rotation much more. In terms of the people, I have been pleasantly surprised at how nice, friendly and helpful they are, as this is not something that is portrayed in the media. I have found that the bank is a great consumer of IT, but there are plenty of legacy systems and so less emphasis on driving technological advancements.

RealVNC Founder and CEO, **Dr Andy Harter** (F BA83, CC PhD90) has been elected a Fellow of the Royal Academy of Engineering in recognition of distinguished contributions to software engineering and commercialisation. Amongst his achievements is VNC, a ubiquitous remote access technology deployed on hundreds of millions of computers worldwide. VNC is embedded in Intel chips, Apple computers, Linux distributions and Google software, and is a ubiquitous RFC standard protocol.

Andy Harter accepting fellowship from HRH The Prince Philip, Duke of Edinburgh, Earl of Merioneth and Baron Greenwich, KG, KT, OM, GBE, AC, QSO, PC.

The Royal Academy of Engineering promotes engineering and is a counterpart to the Royal Society, which exists to serve the natural sciences. The Fellowship comprises the UK's most eminent engineers and provides leadership and expertise focusing on the relationships between engineering, technology, and the quality of life. The Royal Academy of Engineering provides independent and impartial advice to Government and provides a voice for Britain's engineering community. Established by Royal Charter in 1976, it is an independent, self-governing body of some 1,500 Fellows.

Laura James (CC MEng00, PhD05) has co-founded Makespace, an initiative to provide a community workshop for Cambridge and the region, which will enable people to meet and learn, design, build and fix almost anything! Makespace is currently being bootstrapped by its founders, and will ultimately be an industrial building in the city. It will have a FabLab including a 2D laser cutter, 3D printer, CNC router, soldering stations, a meeting and training area, and flexible access control and facilities.

Tim Kelly (TH MA94) did his PhD at the University of York, where he is a senior lecturer in the Department of Computer Science. His research interests include safety case management, software safety analysis and justification, software architecture safety, certification of adaptive and learning systems, and the dependability of "Systems of Systems". He has supervised a number of research projects in these areas with funding and support from Airbus, BAE SYSTEMS, Data Systems and Solutions, DTI, EPSRC, ERA Technology, Ministry of Defence, QinetiQ, Rolls-Royce and the European Commission. He has published over 150 papers on high-integrity systems development and justification in international journals and conferences. He has advised many companies and organisations on safety case development and software safety issues. This has spanned many domains, including defence, transport, aerospace, space, medical devices and marine. Most recently he has been advising companies in North America responding to the US FDA requirements for safety cases for medical devices.

Daniel Pugh (CL BA04) is working at Morgan Stanley where he is a proprietary trader.

Sunil Shah (F BA09) has left Barclays Capital and moved to Last.fm where he is a data developer. Last.fm provides a music recommendation service which crunches user preferences to provide recommendations for music that they might also like.

Last.fm was one of the first users of the open source distributed computation project Hadoop, and has one of the biggest free on-line streaming music catalogues. The data team maintains both the Hadoop infrastructure and the catalogue.

Glen Slade (JN BA87) is working at Oxitec Ltd and Plant Impact plc as a management consultant.

Quentin Stafford–Fraser (CAI BA89, PhD95) is working on his next project, Telemarq. The project, which is in its very earliest stages, is dedicated to improving the way we communicate with each other graphically, and will be done "remotely".

Mark Stringer (RA04) is at Fry-IT where he is an agile project manager.

Bjarne Stroustrup (CHU PhD79) will be a visitor at the University of Cambridge Computer Laboratory for the first half of 2012, and an overseas fellow of Churchill College.

Keith Turnbull (T BA81) has left Citrix and moved to AppSense where he is VP Global Development. AppSense is the leading provider of user virtualisation solutions for the enterprise.

JourneyLog

Vehicle tracking has been identified as a significant growth area. **Alasdair Scott** hopes JourneyLog will be one of the companies to make significant inroads.

TR: Alasdair, can you tell me a bit about your career prior to JourneyLog?

AS: Approaching my 57th birthday, I often feel that I am waiting for my career to start! However, some of my memories include:

Lecturers at Cambridge like Maurice Wilkes, David Wheeler and Roger Needham. Need I say more?

Having the privilege to work with Martin Richards (of BCPL fame) during my diploma year at Cambridge. We collaborated on the kernel of a portable operating system, later known as Tripos, which became the subject of a research project by others. I believe a young man called Bill Gates was doing similar things at the same time, but our career paths seemed to have diverged a bit since then.

Establishing bridgeheads of Tripos in different industries. For example I deployed it in a new Ford factory in Bridgend to drag engines off the production line into automatic test cells to see if they worked. I am still amazed that anyone would let a young graduate loose on such a dangerous project! Martin Richards even informed me last year that Tripos is still being used by Ford for some vehicle scheduling — which came as a surprise, being nearly 25 years on.

Ending up in Brunei commissioning a system to track a personal collection of 3,000 supercars using microwave tags. It was the most surreal thing I have ever done and you had to keep pinching yourself as a reminder that it wasn't just all complete fantasy (which it was in its way). For example, instead of a pet cat or two, the place had its own private zoo with a bored lion and other unsuitable animals in very small cages. There was even a fully staffed F16 flight simulator available for the owner to use as a games console and, to cap it all, the jungle in Borneo was on fire at the time due to wildcat logging, so you had to wear a gasmask at all times when venturing outside!

Perhaps that's enough.

TR: Can you tell me about JourneyLog?

AS: JourneyLog has a simple aim: to provide a cheap and easy way to record and provide evidence of travel, mainly related to reimbursement in some form. Currently, this involves a largely free Android application called PhoneTrack which is designed to work in conjunction with an on-line service at www.journeylog.co.uk.

The purpose of PhoneTrack is to record a fairly high resolution log of locations (typically derived from the smartphone's GPS receiver) and to provide a means of associating tag (attribute) information such as use (business/private) and types of journey legs and stops. This information can then be uploaded in the background to the Web site. PhoneTrack includes considerably more functionality than first planned, largely in response to competition from similar Android apps, featuring a lazy reverse Geocoder, spatial index of known places, data synchronisation etc. To date it has received over 25,000 downloads worldwide, although the active install count is much lower.

It was clear that although many customers thought they needed and bought (or were sold) live tracking, very few actually needed or used this element of their systems; what was much more important was the historical data

The Web site provides secure long term storage of an individual's travel history where it can be further reviewed and edited if needed. It offers a range of standard reports as well as a graphical editor to build custom ones by combining different data filters. One reasonably novel feature is the ability to define rules, which can considerably reduce the amount of manual entry by identifying common activities such as driving to work etc.

May I put in a plug for ElasticHosts here (*see The Ring issue XXVIII*)? Initially, the Web site was hosted from a Linux box in the attic of my house at the end of a fragile 3 mile copper link to the local exchange.

After the village suffered a power cut last February, I realised that things had to change and made the wise decision to move the site to ElasticHost's data centre in Texas. It was a decision I have not regretted and they are a real pleasure to work with.

TR: What prompted you to start the company?

AS: I had been involved in vehicle tracking since the mid 90s when I worked for a GEC Marconi incubator company Star-Track, and subsequently as engineering manager for Tardis (yes really — sci-fi must have been popular at the time). Many analysts had identified vehicle tracking as a significant growth market, but although there were (and are) many players in it, very few companies had made significant inroads or sustainable profits. Working in the industry, it was clear that although many customers thought they needed and bought (or were sold) live tracking, very few actually needed or used this element of their systems; what was much more important was the historical data. This led my co-founder and me to consider whether it could be achieved more cheaply by concentrating on this aspect, and we started experimenting with cheap personal trackers and a prototype Web site in 2007. Other work intervened, but the prospect of a reasonable size trial for a local company prompted us to form the company in July 2009.

TR: How does JourneyLog's offering differ from the products provided by more traditional vehicle tracking?

AS: In many areas, it doesn't compete. Traditional vehicle tracking is often associated with applications like bus arrival information, emergency service vehicles or commercial vehicles with high value cargo etc. where you need a professionally-installed or manufacturer-fitted black box with all the associated high expenses. Alternatively, there is a large segment of the market where individuals need to keep a personal travel record and are often using their own vehicles for their work. For this, JourneyLog can deliver the majority of the improvement in business efficiency normally associated with the traditional model for a fraction of the cost, by eliminating the up-front installation and maintenance needed.

TR: What is JourneyLog's business model?

AS: The primary business model is to generate subscription revenue from individuals and fleet operators with up to, say, 100 vehicles. The next objective is fixed-price contracts with operators of larger fleets, aiming to compete with existing suppliers using the traditional vehicle tracking model. Lastly, licensed sales of the technology — the 'white label' approach. The Web site had been planned from the outset to achieve this, but it is fair to say that the end result is not quite as clean as we had hoped!

We have obviously been considering advertising on the site, affinity marketing etc, but it is difficult to achieve a significant amount of traffic. The typical pattern of use is a once a week visit to generate a report, so there are limited opportunities to generate high hit rates.

TR: Can you tell me about PhoneTrack for Android? I see that the basic app is free of charge but that you ask people to show their support by making a donation. Has this approach worked? I also noticed that the donation amounts are denominated in US$. Are you concentrating on the US market?

AS: I am glad you asked about this, because I think we were late with PhoneTrack. Initially in 2007 the plan was to design and manufacture some hardware, but we changed tack as personal trackers started to appear on the market and adopted the Trackstick and then the GiSTEQ PhotoTrackr which both performed well. Although some early adopters were very diligent, for the most part users tended to forget to upload the data and charge the batteries, and so lost interest. The GPS-enabled smartphone changed everything, in that there was now a bigger commitment to keep it charged and the data could be transmitted over the cellular wireless network or Wi-Fi with little effort.
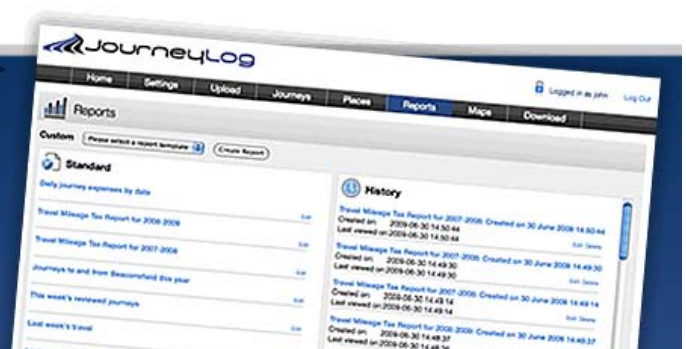
We chose Android because the phones tended to be cheaper and it looked like being the shortest development cycle compared with the other mobile platforms. As our primary business model is to generate subscription revenue the basic app is free, although subsequently a rather ill-thought "freemium" model with a limited amount of in-app billing has been introduced which has had a modest take-up. To date, we have received no donations: interesting, but probably not a surprise.

As a direct result of the Android exposure, we have recently been approached by a subsidiary of a large US multinational to provide mileage expense evidence for its sales force

Finally, the US$ pricing and emphasis is a complete accident. When introduced in December 2010, there was no international support in either PhoneTrack or the Web site for multiple time zones/units/currencies, something we had to address very rapidly as it became clear that over 90% of the downloads were coming from the US.

TR: What have been your biggest challenges to date?

AS: Firstly, we have been developing the business with a small injection of our own capital and a large investment of unpaid time. Over a period this obviously presents pressures and means that you are never able to do everything you want.

Secondly, nobody is going to pay for something when they can get it somewhere else for free.

TR: What are your plans for the company over the next 12 months?

AS: The business plan for the company (which I didn't write) included a revenue forecast of £30,000,000 for this year. We are a little way off that! However, as a direct result of the Android exposure, we have recently been approached by a subsidiary of a large US multinational to provide mileage expense evidence for its sales force. We are still in negotiations but, obviously, hope to be awarded the contract for the project, succeed with it and then use it as a platform from which to grow the business.

For more information about JourneyLog go to: journeylog.co.uk

Get the free PhoneTrack app for Android

Use this QR code to download and install the app from the Android Market.

blinkx

Since *The Ring* last spoke to **Suranga Chandratillake** in 2006 blinkx has IPOed, has 280 employees and eight offices.

TR: Suranga, when we last spoke, we talked about the technical challenges you faced. Then you talked about the never-ending battle with scale and also about the need to work on the ways to get visual information from the videos you index. Do these issues continue to exercise you? What additional challenges do you face now?

SC: Technology scaling is still important, but I think as the company has matured, we've got pretty good at dealing with it, both from a technical perspective and also from the point of view of having a team that can forecast growth and get ahead of issues before they happen. Today we have dramatically fewer failures than we used to, despite dealing with orders of magnitude larger data and more searches. Blinkx is now a 280-person company and the bigger challenges are on the human side — ensuring everyone in our eight offices is in sync with the company as a whole, feels part of the family and is pushing in the same direction. It's a different kind of challenge, but one that is just as interesting as any technical problem I've had to tackle.

TR: Back in 2006 you said that we would look back on the period of the Internet being primarily a text resource as being old-fashioned, that we'd see a continued explosion of the available video on the Web and we'd all need a reliable place to search through it all. At the time I believe blinkxTV was focused on being that place. Has your prediction been realised?

SC: I would say so. Today on-line video advertising is the fastest-growing segment of advertising in the world and names like iPlayer, Hulu and YouTube enjoy household recognition. Having said that, there's still a long way to go. Internet advertising has been massively successful but when you dig into the details it is primarily a direct marketing channel, one that satisfies demand that already exists (think of a Google search ad — you know what you want already, you search for it, Google merely responds to that with the right place to go). What is yet to come is brand advertising — advertising that actually creates the demand in the first place. Today that happens primarily on TV, but also on billboards and in magazines. It's the arty 30-second roll that reminds you that BA is more than just an airline or that a

BMW is what you should drive once you've "arrived". The Internet does a terrible job of providing this sort of advertising solution today but I believe that on-line video will become the conduit for it. Brand advertising is actually a bigger business than direct marketing so this transition, as it comes, will create a massive opportunity for those who have digital media businesses.

TR: Are your users moving away from the laptop to use secondary devices such as connected TV?

SC: Yes, but only to a very limited extent. Mobile phones are actually more popular than connected TVs; the latter suffer from a lack of great UIs and a complete lack of any kind of true "killer app". Even the companies that one would normally expect to do well here have failed so far: Apple TV is massively unpopular when compared to things like the iPhone or the iPad; Logitech has revealed that it is stopping work on the Google TV due to underwhelming demand, and while the TV companies themselves (Sony, Samsung, LG and others) have all built Internet connections into their next-generation boxes, the early numbers suggest people aren't really using the feature.

TR: You've said that video streaming is the fastest-growing mobile activity, and that there's a strong consumer demand for rich media apps. Can you tell me a bit about this and the various partnerships you have entered into over the last 12 months?

SC: Video streaming on mobile is growing very rapidly but one issue is that a great deal is driven by people watching private or personal videos. While it's great that technology is allowing people to connect with their friends and family in a more direct way, that sort of content is never going to be a great place for advertising brands so we still have a way to go before this becomes the large commercial opportunity that I think it can be. We are confident this will happen, however, and have launched a blinkx mobile site, a mobile-enhanced API (to allow

others to build blinkx-powered video Apps) and have entered into a global relationship with Samsung which sees a blinkx app bundled with a variety of their phones and the excellent Samsung GalaxyTab range.

TR: I see that blinkx has also diversified into the Internet browser add-on market, launching Cheep, a social shopping service that provides current price comparisons on products searched on line. What prompted you to make this move?

SC: When we first completed the IPO of the company, we talked about an idea we had called "transaction hijacker", which now goes by the name "Cheep". Essentially the concept is to have an intelligent "agent" on your computer that spends most of its time in silence but, when you're about to buy a product or service on line, perks up and links you to reviews of the purchase, information from others who have bought it before, the best place to get it cheapest and so on. Matching a user's activity precisely enough to ensure you know exactly what product they are looking at is a relatively complex problem technically and we have some patented original work that we believe allows us to do this more effectively than others. It's still early days in this area, but I think it's a fascinating place to play as e-commerce has seen very little innovation since the launch of the price comparison sites which happened almost ten years ago.

> We've always had a team in Cambridge and are now hiring there aggressively and putting more resource into getting that office back on the map.

TR: Since our last interview, blinkx has listed on AIM. You're based in California, so why did you list the company in London?

SC: blinkx was originally a spin–out from Autonomy (another Cambridge-based, UK listed company) and so many of our original shareholders were British institutional funds. While these organisations can invest in the US, it made more sense from a tax and organisational point of view to keep the company on the UK markets. The good news is that I don't believe it has affected our growth or access to opportunities one iota. We've enjoyed the ability to raise capital when necessary, have benefited from excellent, smart investors who have not just invested with us in the long term but actually provided advice and guidance on a variety of topics. Our market cap has topped as high as $850m over the last year so I think we can also say that the value of fast-growing technology businesses can be and is appreciated by the UK financial community.

TR: How do you see the market changing over the next five years?

SC: Although technology is at the heart of everything we do, blinkx is really a media company. In that sense we generate our revenue from

advertising and I think the big, big trend that we'll see in that industry is the continued growth of on-line as a medium. More and more of us spend more and more time on line doing more and more things. Our eyes are open for only so many hours a day so we're doing this at the expense of other channels that will continue to decline in relevance. Advertisers get this and will adjust budgets accordingly. If you think swings such as the ones we've already seen from newspapers to Google were big, just you wait.

TR: Looking back, is there anything you would have done differently?

SC: I'm honestly not just pandering to the Ring here, but I wish we'd kept a better focus on the Cambridge area and team. We've always had a team in Cambridge and, as the founding technology team, they've always worked on some of the most important things in the company. However, as we grew rapidly in the US, really from a sales and marketing perspective, we may have lost some focus on growing that team and keeping them central to the company. We came to a realisation around that recently and are now hiring there aggressively and putting more resource into getting that office back on the map. As an aside, that probably means I'll get to spend some more time back in Cambridge, which I'm really looking forward to!

To search over 35 million hours of video go to: www.blinkx.com

Hall of fame news

Bango

Bango has been shortlisted for the Best Transactions Provider at the Mobile Entertainment Awards 2011, for the sixth consecutive year.

blinkx

blinkx, the world's largest video search engine has acquired Prime Visibility Media group, a leading on-line performance advertising network and digital marketing agency. The acquisition consideration of US$36 million is to be funded through blinkx's existing cash balances and the proceeds from a proposed placing of new ordinary shares in the capital of blinkx.

DisplayLink

DisplayLink, the provider of solutions that simplify the connection between monitors and computers using USB, has closed a US$15 million Series D funding round. The new equity financing was led by incoming investor Cipio Partners and co-led by existing investor DFJ Esprit. Previous investors Atlas Venture, Balderton Capital and DAG Ventures also contributed to the round.

Masabi

Masabi, the developer of mobile phone ticketing technology, has announced the completion of a US$4 million Series B funding round with m8 Capital, the mobile technology venture capital fund.

The funding will be used to support deployments with multiple rail companies in the UK, and for the development of new service features, including NFC technology. It will also help facilitate expansion into new markets, particularly the US, where the company is seeing strong interest.

Redbeacon

Redbeacon, the Web marketplace that connects people with professional home service providers such as plumbers, painters, and gardeners, has launched its first native app for the iPhone.

The biggest new perk of the app is that it lets people shoot videos, take photos or record voice memos when requesting home services; this makes it easier for consumers to show potential contractors what they need done, and it save contractors' time in assessing job prices.

Sophos

Sophos, the IT security and data protection company, has been named a finalist across six of SC Magazine's 2012 Reader Trust Awards categories.

TouchType

TouchType has released an update for SwiftKey X and SwiftKey Tablet X.

The enhanced multi–touch framework in the release should make life much easier for rapid typists. In addition, the update adds Arabic and Hebrew to the list of supported languages, bringing the total to 35. Other enhancements include DVORAK and COLEMAK layouts, the ability to change the height of the keys to suit your device and fingers, and improvements to the settings menu, alternative character selection, and sharing options.

Ubisense

Ubisense has joined forces with international lean management experts, Iter Consult. The two companies will share their respective skills in precise location solutions and lean management consultancy, to help companies of all sizes simplify business operations, to increase efficiencies and eliminate waste.

Job Bulletin Board

November

Trigger
- *JavaScript and mobile developer*

Duvas Technologies
- *Software engineer*
- *Research scientist*

State
- *Lead mobile developer*

Progress Software
- *Senior software engineer*

Linguamatics
- *Senior software developer*

ElasticHosts Ltd
- *Cloud support*
- *Online marketing manager*

October

Libereco
- *Java Server Developer*
- *Platform engineering developer (C++)*

I Spatial
- *Software engineer (Cork)*
- *Software engineers (Cambridge)*

Linguamatics
- *Senior QA engineers*
- *Solution developer*
- *Technical support engineer (Boston, MA)*

Visit the Job Bulletin Board in the Business and Professional section of the Ring Web site.

Tomas Pfister

Tomas Pfister hopes to return to Silicon Valley when he finishes his PhD.

Now a year after graduation I am doing a PhD at Oxford in Professor Andrew Zisserman's computer vision group. Before that I interned with Google in California and created the first computer vision system for recognising facial micro–expressions at University of Oulu.

At Cambridge I knew that I wanted to do a PhD in human-centered computer vision. However, first I had to complete a year of compulsory national service in Finland. I then interned at Google where I was given a free hand to do computer vision research. This gave me a chance to finally try automating detection of facial micro-expressions, an idea I had been developing through my years at Cambridge.

Micro-expressions are very rapid facial expressions that reveal emotions people try to hide. They can be used for lie detection and are actively used by trained officials at US airports to detect suspicious behaviour. For example, a terrorist trying to conceal a plan to commit suicide would likely show a very short expression of intense anguish. The interesting thing about micro-expressions is that they are very difficult to recognize with the human eye. Even highly trained humans are very inaccurate. This makes a computerised solution particularly attractive.

At Oulu we succeeded in creating the first system to automatically recognise micro-expressions. We also demonstrated that it outperforms human recognition accuracy. The work was published at the International Conference on Computer Vision in Barcelona.

Working at Google was a very positive experience and working in the main office in the Silicon Valley made it even better. The start-up culture in the Valley is very strong and one can feel this even within a big corporation such as Google. While I was assigned to work in their ads department I ended up spending a lot of time solving a new completely unrelated computer vision problem in a different group.

Looking back at my time in the Valley I feel a strong urge to return after my PhD. There are a lot of opportunities that I hope our future graduates will catch.

During my national service in Finland my fiancée had already started her DPhil at Oxford. Luckily I found an excellent supervisor there.

I am now at Oxford working on automatically recognising sign language. Our aim is to be able to translate sign language to text in real time to enable signers to easily communicate with non-signers. We find the correlation between subtitles and signs in BBC news videos that are broadcast nightly with both a sign language translation and subtitles. These provide us with a practically infinite amount of training data that we can use for training our sign classifier. This should enable us to nail the sign language recognition problem as we did with micro-expression recognition.

Computer Laboratory news

The **Raspberry Pi Foundation** hopes to excite and engage children to learn about computing.

Following the widely reported news that technology giants Google and Microsoft have joined forces with the Next Gen Skills campaign (which calls for the government to ensure today's schoolchildren are equipped with the required computer-related skills), the UK government has admitted that the current ICT programme in schools is insufficiently rigorous and in need of reform.

"Coding is the new Latin," said Alex Hope, co–author of Next Gen. "We need to give kids a proper understanding of computers if they're to compete for all kinds of jobs."

The Raspberry Pi Foundation hopes its ultra-small, staggeringly cheap computer will excite and engage children in much the same way that the BBC Micro did in the 1980s. The charity was founded in November 2008 by its trustees (the Computer Laboratory's Professor Alan Mycroft and Dr Robert Mullins, serial entrepreneur Jack Lang, Frontier's founder David Braben, Norcott Technologies' Pete Lomas and Broadcom's Eben Upton) to promote the study of computer science and electronics at the school level.

The Raspberry Pi is an ARM-powered PC that plugs into your TV and a keyboard. It has a 700Mhz ARM core, a powerful VideoCore IV GPU allowing 1080p decoding at a solid 30 frames per second, 128MB/256MB RAM, HDMI Out, an SD Card slot, 5V micro-USB for its power supply and, depending on the model, 1/2 USB ports with a 10/100Mbps LAN Jack. It is the size of a credit card, and at $25 or $35 (depending on the model), certainly won't burn a hole in your pocket. Raspberry Pi also plays HD video and has Xbox–quality graphics.

Educational release is planned for mid-2012, and Raspberry Pi Foundation wants to see it being used by children the world over to learn programming. Yum yum!

To find out more visit: www.raspberrypi.org