eestec newsletter

Electrical Engineering STudents' European assoCiation

The EESTEC Newsletter is published monthly. It hopes to reach all EESTEC members and keep them informed of EESTEC activities. It can be downloaded from <ftp.eestec.org>

January 2000
Volume 14, No. 1

Founded in 1986, EESTEC is an organisation that promotes the exchange of ideas, and the development of international contacts, between engineering students and companies throughout Europe. EESTEC now has 28 branches in 18 different countries.

EDITORIAL

Dear EESTEC members,

This issue marks the arrival of the new Millenium. I hope that everybody has had a very good and memorable time counting down to year 2000.

A lot of exciting EESTEC events has already been planned for the new year, as evident in *CALENDAR* on page 15. One of the most important events to look forward to is the EESTEC Congress which will be held in Delft from 19/3/2000 to 25/3/2000. *LC OF THE MONTH* is proud to present LC COSENZA who talks about their birth and announces their first workshop to be held in May. In *OPPORTUNITIES*, read about EMDS Careers in Germany which will be held in Berlin from 4 -6 April 2000. Finally, do not miss out on the interesting discussion about Genetic Algorithms in *The Leading Edge.*

A new year inspires new hope. Let us hope that EESTEC will grow stronger in spirit and bigger in strength in the new Millenium as well as for many Milleniums to come...

Yours sincerely,

Denise

Denise
(Hwee Peng, Ang)
EESTEC Newsletter Editor

FERNANDO HERRERA

Secretary of EESTEC International Bureau

Hi EESTECers!

I'm Fernando Herrera, well, as a good spanish I'm Fernando Herrera de las Heras, with two surnames. Currently I'm the secretary of EESTEC International Bureau (IB for my friends), due to this I'm writing this profile.

I was born 21 years ago at Granada, a city in the south of Spain. At 18, I went to Madrid to study Telecomunication Engineering. My first year here, at Madrid Politechnics University, I become member of EURIELEC, our local guild.

One year later I was very active in our guild, and became member of EESTEC. I was also developing a Spanish Linux Distribution, so I was very very busy. At 1998 I leave Politechnics University to study Computer Engineering at Complutense U.

As a EESTEC member I participate in a exchange with Helsinki, and I went to the Slovenia Congress, where I was elected as the new IB Secretary. After these events, I decided to organize a "big" one in Madrid. With Guillermo, Alba, and Alejandro we become the 4ME (4 Maximos Enmarronados, which has no translation into English), and about May 1999 we had the name: "Computer Networks". Our work was very hard, but finally we get enough money from our sponsors and the workshop was really good.

My work as IB secretary is... oh, yes, I remember... is to get all the EESTEC documentation and info, and send to others LCs, contact with companies, etc... I'm also the maintainer of the Yellow Pages. Before summer I have designed and developed a new Yellow pages system, via a web interface, but I need some time to finish it and set it up.

Now I have just founded a new company, with three more friends, Onírica (http://www.onirica.com), devoted to Open Source, Internet, and Software consulting.

My future plans are to finish my degree, make Onírica the best computing company in the world, write a book and have enough time to get fun.

NEWSMAKERS

SEATTLE—Microsoft and British Telecommunications today announced plans to roll out wireless Internet services in Europe beginning with a trial involving about 1,000 mobile phone users. The three-month trial, described as the biggest ever, will allow employees of five major companies in Britain and Norway to use their wireless phones to access email, calendar information, and other data, including content from Web pages customized for the small phone screens. At the end of the test period BT and Microsoft expect a large commercial deployment of the service, estimated for early 2000, according to a statement from the two companies. The planned service is the fruit of an alliance between the two companies announced in February. Under the relationship with BT, Microsoft's Exchange Server will be the primary messaging platform and its microbrowser Web software will be used as the interface for the mobile phones, said Jonathan Roberts, general manager of Microsoft's Windows CE business.

TOKYO — Advances in the ability to grow quality epitaxial layers on mismatched substrates has brought device researchers close to building a blue vertical cavity surface-emitting laser (VCSEL) diode. The advantages of a vertical laser configuration have been amply demonstrated as longer wavelength VCSELs enter the commercial mainstream. By operating at much shorter wavelengths, blue versions of the device could increase data densities on networks and in other specific applications such as optical disks. A joint research project among three universities — the University of Tokyo, Germany's University of Würzburg and Italy's University of Lecce — recently achieved blue laser emission at the 399-nm wavelength in a vertical cavity structure fabricated in the gallium nitride system. The lab demonstration, reported recently in the journal Science, used optical stimulation, rather than an electronic contact, to achieve short-wavelength laser emission. While optical pumping represents a shortcut to getting photons into the cavity to verify laser operation, in principle the same effect could be achieved with electronic input, forming a true laser diode.

SAN JOSE, Calif. — IBM's microelectronics division has introduced the PowerPC 440 core, designed for ASICs and IBM-designed standard products, and fabbed in the company's 0.18-micron (drawn) copper process. Tom Sartorius, the design team leader who presented the PowerPC 440 here in San Jose, Calif., at the Microprocessor Forum, said the core is a 32-bit design intended to run as fast as 550 MHz. IBM said it will deliver three times the performance of the PowerPC 405 core running at 266 MHz, the current performance leader in IBM's embedded PowerPC family.

GENETIC ALGORITHMS

by Peir Wei Chia, LC London

In this modern era, computers are used to solve many complex problems in diverse fields. Be it a problem in mathematics, physics, engineering, or even social science, computers have helped perform the various laborious calculations necessary to solve it and have provided us with new insights into such problems. Many people working with computers have also taken advantage of their high speed to devise methods for solving new problems.

EFFICIENCY & "BIG O"

As the computer is not capable of thought, it requires exact data and instructions to work with. Such instructions, or algorithms, provide the basis for any computer-based problem solving. Classical algorithms, many of them elegant, have been developed in this century for dealing with problems such as data compression, graph optimisation and even Fourier transforms. Much of the work in developing algorithms is concerned with their efficiency, particularly the time required to solve large problems. Many straightforward ("naïve") methods lead to inefficient algorithms; for example, the well-known bubble sort is much inferior to the equally famous, but much less straightforward, quicksort. (A sorting algorithm is used to put items in a list in some order, for example, numerical or alphabetical.)

The primitive idea behind the operation of a genetic algorithm is that "The fittest survives."

The efficiency of an algorithm is often measured with the so-called "Big O" notation. When we talk about how long an algorithm takes to solve a given size of a problem, we call this measure of efficiency the time complexity. Often, the size of a problem is simply the number of items in a list, or the number of nodes of a graph to work with, and is thus usually given the symbol n. For the purposes of our exposition, we shall not go further into the meaning of the "Big O" notation, but suffice it to say, when we say an algorithm has time complexity of $O(n^2)$, we mean that if the problem is twice as large, it would take roughly four (i.e. the square of 2) times as long to solve on average.

Many problems can be solved in polynomial time, i.e. the time complexity of the algorithm can be expressed as powers of n or slower-growing functions of n such as logarithms. Operations such as matrix multiplication belong to this category; the straightforward algorithm takes $O(n^3)$ time while some recent algorithms do this in $O(n^{2.8})$.

"UNSOLVED" PROBLEMS

The focus of this discussion is on the numerous problems that are still "unsolved"; the best algorithms for such problems have exponential or factorial time complexity, which effectively means that our sun will burn out before the computer will give us any solution to a problem of reasonable size.

Such problems are often the easy-to-ask, hard-to-solve kind of tasks that many people spend much time on; a very good example is the time-tabling problem. A school may have certain constraints on resources that must be satisfied (hopefully optimally) by a well thought-out time-table, but even the basic problem of arbitrarily churning out a time-table that meets the constraints without any optimisation has turned out to be a difficult (time-consuming) task for any computer to do. This is because the only known way to solve problems such as this one on a computer at present is via trial-and-error, albeit in an automated manner. If one considers the number of ways to arrange entries in a time-table, it should be no less than obvious that the operation will certainly take exponential time to complete.

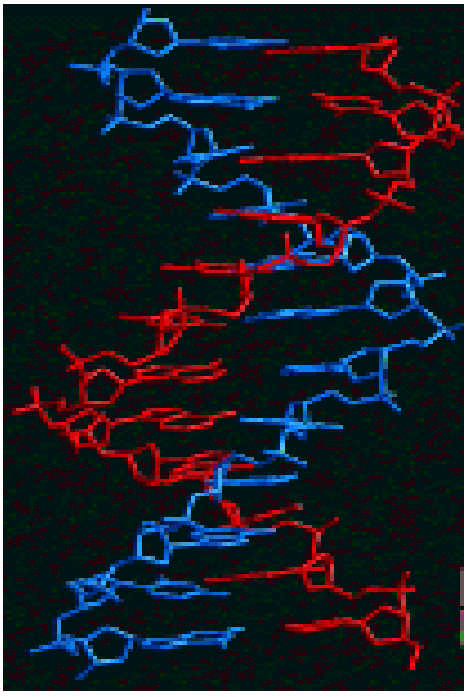
A HEURISTIC METHOD

What we need is a heuristic method of solution that will somewhat mimic the way humans solve such problems. That is, solving the problem with some guessing.

Genetic algorithms are a special class of heuristics used in solving optimisation problems that involve maximising a given function. They were developed to tackle some of the difficult problems that could not be easily solved by traditional deterministic algorithms. Genetic algorithms rely on the model of biological evolution for their operation. The idea, though seemingly bizarre, gives nearly optimal solutions on many problems and is still a focus of current research. Applications under investigation include traffic signal control and oil pipeline routing.

"THE FITTEST SURVIVES"

The primitive idea behind the operation of a genetic algorithm is that "The fittest survives." The problem is re-expressed in a form that allows the variables to be codified into binary sequences that form "genes". For example, suppose we would like to find the minimum point of the function $y = x^2 - 2x + 3$ for x between –512 and 512. Then x could be expressed as a 10-bit binary sequence (gene) for the algorithm to operate on.



The main operation of a genetic algorithm mirrors closely the process of biological reproduction. In an ecological system, a species possesses a genetic pool, which encompasses the variations in the genetic make-up of individual organisms of the same species that give rise to differences in features such as weight, height and perhaps dexterity. The equivalent property in a genetic algorithm, using our example, is to maintain a genetic pool, which is really a list of genes. This might be implemented as an array of, say, 100 binary sequences representing x. Each bit in the binary sequence roughly corresponds to a base in the DNA strand that makes up the biological gene.

REPRODUCTION

In an evolutionary system, successive generations of a species, provided that its interactions with other species have a negligible effect on its survival, will tend to be better than the previous ones. Weaker individuals in a particular generation are less likely to pass on their traits to the next generation. A genetic algorithm reflects this property in the form of a fitness function. The fitness function is applied to each gene in the pool, yielding a fitness value that determines the optimality of that particular gene. For example, an appropriate fitness function in the problem described above would be –y itself. The larger the value of the fitness function is, the greater the probability of survival of a particular gene into the next generation.

Thus, the first step in a genetic algorithm is to first randomly produce a genetic pool, i.e. generating random binary sequences of x. Then, the fitness function is applied to the genes. The next generation of the pool is subsequently generated from the present pool by randomly selecting genes such that genes with greater fitness have proportionally higher probabilities of being selected. This process ensures that values of x that are likely to be optimal will remain on the genetic pool.

CROSSOVER

However, one notices that the above process would only preserve the best genes from the initial genetic pool, with the eventuality of the fittest gene in the initial pool flooding the initial pool with copies of itself. This is obviously undesirable, since without further refinement to the process, there would be no chance of obtaining completely new genes form the old ones.

To solve this problem, we look to nature again. We know that during reproduction, crossover takes place, in which genes may exchange portions with one another. We model this in the genetic algorithm by randomly choosing pairs of genes and swapping random portions of each gene in every pair chosen. This way, the benefits of biological crossbreeding are realised — the best features of the best surviving genes are combined to form new, possibly even fitter, genes.

The process of crossover can be implemented as a post-reproduction stage in the algorithm. Typically a pre-set number of crossovers will be performed. Also, in most implementations, crossover is performed by choosing a random location on a gene, and swapping the portion of the gene above that location with the portion at the same location on another gene.

MUTATIONS

Typically, the combination of reproduction by "natural selection" and crossover will tend to drive the genetic pool towards optimality (i.e. x = 1 in our example). However, it has been found that introducing mutation allows the algorithm will work even better.

A mutation is performed in the algorithm by randomly flipping bits as they are copied from gene to gene in reproduction and/or crossover. The probability of error, which is usually a configurable variable, is typically very small to prevent instability. Mutations can often lead the algorithm to better solutions, as like how some species adapt to the changing environment via the same process.

SOLVING PROBLEMS

Finally, to use a genetic algorithm to solve problems, the processes of reproduction, crossover and mutation are performed over a number of generations (say 1000) and then the final genetic pool observed. Often, a very stable genetic pool might mean that either a good set of solutions have been found, or that "extinction" has taken place. This non-deterministic nature of genetic algorithms is, unfortunately, a most serious disadvantage. Much work is needed to ensure the reliability of such algorithms.

It has been found that genetic algorithms typically converge rapidly towards feasible solutions, nevertheless. More importantly, compared to conventional algorithms, they provide a set of near-optimal solutions, and are hence capable of locating multiple optimal points within a fitness function readily. For example, with a higher-order polynomial fitness function, multiple roots can be simultaneously found very efficiently.

To sum it up, the application of natural processes to computing in the form of genetic algorithms is a viable alternative to consider when dealing with complex, possibly intractable computations. This is highly suitable when a near-optimal solution is sufficient and if the inherent unpredictability of such algorithms can be tolerated. Of course, genetic algorithms may not be a panacea for doing all difficult computations, but they do at least make approximate solutions available at a (minute) fraction of the time required for an exact solution. As it may be said, having almost an answer to a question is better than no answer at all.

LC COSENZA

LC OF JANUARY

THE BIRTH

"…so when the mirror becomes like a thin layer of fog, the three little girls without any fear decided to jump into, attracted by a new world that sounded so different and far.

As soon as they were on the other side of the mirror, apparently everything was similar, if not completely equal, to the normal world; instead after some minutes the chessboard's pieces and all the flowers started to talk and walk, and they understood that it wouldn't have been just an adventure, but a complete new world to discover and live…"

Thanks to Lewis Carroll for the inspiration he gave us with 'Alice in wonderland', effectively his tale is similar to the LC Cosenza's birth in 1998.

NEW CHALLENGE

Just two years have passed since the Reggio Emilia Congress and now the people involved in our NEW CHALLENGE are in number as the vital, joyful, little spotted dogs of '101 Dalmatians'.

What can you imagine about all these people, industrious as 'The Ant-Z', and with same exploring will of 'Ulysses'?

Of course that they are able of daily working, of taking the right wind in order to ride the EESTEC Wave and deciding to race with William Fog, '80 Days around the world' main character, take part to all 1998-99 organised events, also to know and understand the mind's motivations and the heart's feelings of the fabulous EESTEC People.

YEAR ZERO: "DISCOVERING MARE NOSTRUM" EXCHANGE – MAY 1998

After having had all these experiences, after having run for the C.O.C., and having produced a boardmember, it was time for LC Cosenza in year zero of its history, believing, as 'Aladdin' in the EESTEC genius, decided to 'rub the oil-lamp', so it could expresses its three desires:

Host as many EESTECers as possible, in the best way it was possible;

Make feel the warmth of our people and show the culture and the beauty of our land;

And the last? That it wasn't the last!

FUTURE

About it, LC Cosenza is proud to announce its first workshop, it will be held from the 28th of May up to the 3rd of June with the subject: "Internet Improvements".

It will be organised for 45 students, so that we hope to have someone from every LC and since Cosenza, as someone said, the southern edge of Europe (just geographically, because we are in the middle of the world with our WILL-POWER) we are also exploring the possibilities to reimburse (partially!) the travel expenses.

(A special thank-you to Jan Klostermann, from Cottbus for the dictation and Alessia for her patience and corrections!)

Sponsors' logos

SUMMARY OF EVENTS

1998
.***Congress Reggio Emilia*** 31 March-8 April
.***Exchange Zurich*** 29 April-6 May
.***Workshop Helsinki*** 15-22 November
.***Workshop Aachen*** 29 November-6 December

1999
.***Congress Ljubljana*** 11-17 April
.***Exchange Cosenza*** 2-8 May
.***Exchange Oulu*** 22-29 May
.***Exchange Vienna*** 21-28 June
.***Back-Exchange Delft*** 9-15 October
.***Workhop Madrid*** 15-27 October
.***Workshop London*** 15-22 December

UNICAL (University of Calabria)

The University of Calabria, since the very beginning of its activity, which took place in the year 1972, has worked very hard to develop research both at national and international level.

It provides for University high quality education focused to student's qualification in important fields such as Arts, Economics, Engineering, Mathematics, Physics, Natural Science, Pharmacy and Law.

The University of Calabria has an european standard education which welcomes students from other countries, who come in the South of Italy also because it's an attractive, friendly, beautiful and safe place to live.

The Faculty of Engineering offers seven degree courses, each based on a full-time five year curriculum:
- Building, Chemical, Civil, Computer Science, Environmental, Management, Mechanical.

The 'numbers' of the Faculty of Engineering are:

Teaching Staff	90
Researchers	50
Students enrolled	6000

Useful addresses:
www.ingegneria.unical.it
International Office:
e-mail: socrates@unical.it

TOWARDS A NETWORKED WORLD

LC LONDON WORKSHOP

written by Enrico Natalizio (LC Cosenza) and Tomas Soroco (LC Paris)

From the 15th to the 22nd of December, LC London welcomed 30 EESTECers. The week was fantastic, I think everybody enjoyed oneself to the full ! !

At Schlumberger

Welcome party at the Union table tennis room & cocktail night at the union

(Wednesday 15th)

On Wednesday, EESTEC people started to arrive. LC London collected all of us at the airports or at the railway stations.

At 7.00 PM, as most of the participants had arrived, the EESTEC group went to the Union of the Imperial College to have the welcome party. There, each participant introduced oneself and all of us started to feel the EESTEC atmosphere. Italian people managed, as their reputation involves it, to be noticed with their very Italian sense of humour.... As the Union gets a disco inside (!!!) some EESTECers went dancing and all of us came back to the hotel with the last tube.

On that first night, the contact between cultures was very easy, and I felt how EESTEC people were very quick to harmonize themselves. That's a good start !

The intro speech and the trip to Schlumberger

(Thursday 16th)

At 7.30 AM, everybody wakes up and gets ready for the welcoming speech at the Imperial College. We crossed Hyde Park early in the morning to get there, which was very quiet and quite peaceful. In the lecture room, the EESTEC supervisor Andrew Holmes welcomed us introducing the Electrical Engineering Department of the Imperial College and wished us a good Workshop. This official welcome gave us a good feeling of the work of LC London: the workshop looked very promising.

Then the EESTEC bus (No food, no drinks, no cigarettes, no ice-cream on board please : just sit, thanks) took us to Schlumberger at Cambridge. The trip to that company was very interesting. Many of us learned a lot about this international company (French at the beginning) : how it works, what are the main skills of its activity.

The day planning looked like :

11.00am: arrival & coffee
11.30am : presentation (part I)
1.00pm : lunch
2.00pm : presentation (part II)
3.00pm : tour in the labs
4.00pm : departure

The timetable was fully respected. The presentation part I was about Schlumberger in general. They work in many different fields, most of them are very useful for daily life : microchips for credit cards, for phone cards, for mobile phones... and petroleum activities are still a very important field. Its market position is very good, as it gets the first position in America, in India, in Asia and the second position in Europe. We all felt that Schlumberger's force remains in its will to be the best in each field of its work. Founded 70 years ago by two French brothers, Schlumberger is now specialised in high technology. We all saw it for ourselves while visiting the company : no cameras, no video cameras allowed inside the labs. We saw huge labs for mechanical experiments and we attended a 3D video presentation, which showed us the possibilities for security anticipation. Thanks to that software, it is now possible to test virtually large-scale technologic achievements. That trip was very enriching and all of us want to thank LC London for giving us this opportunity.

Trip to Nortel Networks

(Friday 17th)

The third day of Workshop has been the day of visit to the Nortel Networks Laboratories at Harlow. Nortel Networks is a giant in the telecommunications field with 75000 employees worldwide and $ US 17,6 billions of global revenue in 1998.

With more than 1200 employees, the Harlow Labs represent the corporation's largest Research & Development facility in Europe.

It's a multi-disciplinary centre that is focused primarily on the evolution of carrier networks, together with a significant amount of wireless network development.

The Labs' origins are linked to an eminent heritage of technical achievement and innovation, including a number of prominent breakthroughs and achievements that spawned some of today's most advanced telecommunications technologies.
Our visit to their laboratories was really a 'jump in the future' !!!

Dinner at More House and the Xmas

Carnival (Friday 17th)

LC London introduced us to the More House : this is a kind of chaplainry where we had good time. On that night, LC London had brought 40 pizzas, so we had dinner there and we all discovered Blaz's talent for playing jazz music on the piano... Afterwards, we went to the Union for the Xmas carnival : a James Bond theme was on. All the English people of the Imperial College wore evening suits, and all the girls tried to look like James Bond girls, which is quite difficult as anybody can't be a James Bond girl. But some of us left earlier for the famous London club Ministry of Sound, which was very nice indeed.

All in a Bar

Saturday dinner at Paolo's

(Saturday 18th)

The day after the trip to Nortel Networks, we all went, by EESTEC bus (no food, drinks...), to Canterbury where we stayed at Paolo's for the night. The place was a huge empty house where all of us enjoyed that night to the full ! ! We had very good Italian pastas, thanks to Enrico (x2), Flavio, Marcello, Francesco, Luigi,

Francesco's Conquest

Chiara, Felicita and Alessia. In that amazing house, we had room to play stupid games, which become really funny ones once alcohol is bought to the head. Then we have been dancing, singing (or shouting, it depends if you are listening or taking part) for hours until our voices couldn't help a word....

Visit of the brewery at Canterbury (Sunday 19th)

On Sunday morning, despite the miss of sleep, 20 of us went to visit a brewery at Canterbury. The owner was one of Paolo's friends, so we had a very exclusive presentation of his activities. We tasted several different beers (sorry : bitters) and some of us felt drunk at 11.00 am... But I am sure they didn't miss a word of the visit, and I think they enjoyed it even more.

Trip to IBM (Monday 20th)

After having had free time during the Sunday afternoon and evening to see and be amazed with the incredible Xmas London, it was time for the third company visit.

So we started again with the same coach (no food, no drinks…) to reach the IBM Laboratories in Hursley.

IBM Hursley is a dynamic, modern, multi-cultural site with a world class reputation for products and services. Software developed and maintaned there is critical to companies around the globe, and can be found in every area of business.

IBM Hursley has always had a strong presence at the heading edge of technology. Its Storage Systems Division has developed high-performance, high-capacity storage system for the largest computer installations in the world.

The Java Technology Centre is deeply involved in advanced projects aimed at bringing its technology to "persasive computing" products such as Personal Digital Assistans and mobile phones. IBM Hursley is surely an exciting place to be !!!.

Phantom of the opera Musical (Monday 20th)

When we came back in London, suddenly: "…….the Phantom of the opera is here…..inside your mind…", ten lucky guys were present to the fantastic musical at the 'Her Majesty's Theatre', despite the name of the theatre (God save the Queen!!), the spectacle was so exciting that, at last, we bought the mask of the phantom and waited for the actors' autographs.

Lectures at Imperial College (Tuesday 21st)

Tuesday 21st was the day of the lectures about "Towards a networked world", the workshop's subject, at the Imperial College.

So the first seminar was held by Prof. A.G. Constantinides, head of the Communication and Signal Processing Section at the Imperial College, who stimulated our "genius" with a "Personal Perspec-

tive on some Significant Directions", consisting in showing us his photos album and how to improve the images' quality….. Congratulations Prof. Constantinides, your presentation was really amazing!!!

Just a question remained at the end of the speech, the wonderful girl showed in one of the slides was your daughter???

After him Prof. R. Spence, professor of Information Engineering held his lecture about "Trading Space for time", so he explained how to abstract a model from the simple browsing of objects and how it's very natural and usual for us.

Farewell party

(Tuesday 21st)

On the last night, LC London had planned the farewell party. At 8.00 pm all of us met at More House. LC London team had spent all the afternoon cooking for us : we had pasta au grattin, courgette au grattin, potatoes au grattin, ... and a wonderful chocolate cake made by Zouhair.

Once this meal was eaten up, the farewell party started : all the participants gave their presents to LC London. Each participant had brought one of its speciality ; most of the time it was alcohol, food or candies.

We had lots of fun on that night : everybody felt it was the last night, the last party, the last EESTEC night in London.

At 11.00 pm we all went to Zouhair place where we had really good time (especially Alessia...). Thanks to MTV, we had music for the atmosphere; thanks to all the participants, we had enough alcohol for everybody, thanks to Zouhair's neigbours, we could make all the noise possible without disturbing anybody. That was a good night.

Thanks LC London, it was fantEESTEC!!!

Farewell Party

EMDS Careers in Germany
brings high-potentials and ambassadors to Germany

"The end of communism is 10 years ago. A Europe including the Eastern European countries is soon to become reality. So why are German authorities that restrictive in granting work permits to us? We wouldn't overrun Germany!" **Magdalena Podoska** wonders and is filled with indignation. Podoska is one of the candidates taking part in the discussion: Quo vadis management: can foreign managers secure Germany's economic situation?' organised at the premiere of the recruitment event **EMDS Careers in Germany**. The questions posed by the polish graduate hit the nail on the head. She is exactly what so many German companies are looking for: an international high-potential. At this recruitment-event for international up-and-coming graduates, who want to start a career in Germany, she had several interviews with companies such as Quelle, debis and Ernst & Young.

At the age of 29 Magdalena Podoska has achieved quite a lot. In Poland she is head the controlling team of a subsidiary company of Financial Service GmbH. And now she plans to rise to new professional challenges in Germany. "And due to private reasons", she adds with a slight smile. Her partner is a Greek-German who lives in Berlin.

Today Magdalena Podoska certainly leads an international life. In Poland she works for an international company, during her studies she was an exchange student in Maastricht and now she is planning her move to Germany. But her life has not always been international. She does have a great-uncle who stayed in Great Britain after the war because he feared the repression. But as a child she only went to visit him twice together with her parents. Travel was difficult – especially to Western Europe.

The drastic change came in 1989 when the Iron Curtain fell and Magdalena Podoska started her degree at the university of Lodz. As part of her business studies, she took up English and Spanish. Together with two friends she moved to Warsaw. The parental home outgrown, financially independent through student jobs and the warmer political East-West relationships, finally gave her the chance to travel.

Alea iacta est! In January 2000 she will start her new job with debis in Berlin. **With EMDS Careers in Germany** she begins her career in Gemany and it is easy to see that she is well prepared to take this step. When asked during the discussion "What she expects of her job in Germany" she does not have to think long about the answer: "I am looking for a new challenge. But it is not only that I can learn something from a German employer. I see it more as a give and take relationship. I feel that I am an ambassador of my home country and bring with me the knowledge about the Polish market gained in Poland." During this discussion Magdalena Podoska remains decisive, very friendly and obliging. An ambassador of her country!

EMDS, THE ORGANISER

EMDS Consulting GmbH, is the German branch of the EMDS Group which has over eleven years experience in helping graduates and young professionals on their way to find excellent careers.

***Applicant requirements*:**
- a working knowledge of German and at least one other language
- degree in Engineering, IT or Business
- ready for employment within six months
- less than seven years work experience
- more than five years work experience outside Germany (applies only to German nationals)

Location/Date:
The next EMDS Careers in Germany will take place in Berlin 4 - 6 April 2000.

BORED TALK

Hi EESTEC 'People',

I'm very lucky and honoured that my second 'bored talk' is also the first of the New Millenium. We, finally, arrived in the 2000, where future and present are a unique thing, where intentions and reality can be combined in a while, so I'm going to talk about the on-going and will-be-running EESTEC projects.

First of all the 14th EESTEC Congress, everyone got the invitation from Delft, two persons from each LC can take part, we strongly advised the LCs to send their participants, especially those who didn't take part in the last Congress.

On the activation front, observers from Torino and Cambridge have recently taken part in the London Workshop and have planned to investigate how to set up an association at their University. Minsk from Belorus has expressed the will to join EESTEC and have already confirmed their participation to the Congress.

Moreover a new version of the Activation CD-ROM has been completed by LC London.
On the internal front, we are working on the realisation of the E2K Census, having sent the second e-mail about 'Internal Structure of the LCs' and approaching the third stage of it ('Universities and Faculty').

Our web-staff has recently added a new feature to our website: The Yellow Pages. This is a kind of searching server that allows us to get information of any members of EESTEC all over Europe.

At last but not at least the Board (and also you via Paul's forwarded e-mail) got good news from the Students Outreach Department of ESA. They have offered us a strict collaboration consisting of funding projects that sustain and motivate interest in Science and Technology by applying for a financial annual award. Their aim is stimulate highly talented youngsters to dedicate their career to space favoring a highly skilled workforce for the 21st Century.

That's it,
Keep on working,

Enrico Natalizio, internal Vice-Chairman

FORUM

In this month's forum, a discussion was opened by Paolo Cuomo on pooling experiences on raising funds for events. Fernando Herrera readily shared his experience on how he had organised a workshop and has in fact planned to write a report on it.

Bernie quickly pointed out that this idea had earlier been brought up in Congress 98 and was indeed available in EESTEC Userguide. Iikka affirmed this and commented that one can only learn so much by reading. He said more can be learned by trying and making mistakes. He had some idea about having a workshop on fundraising in the next Congress.

The forum is run very efficiently by EESTEC's own web master. Anyone can post new topics or answer other people's questions. You can even argue against their thoughts.

The online forum can be reached from the main EESTEC Web page URL **<http://www.eestec.org>.**

LETTERS TO THE EDITOR

Dear EESTEC members,

How do you find the previous issue of the newsletter? Do you have any comments or opinions? Please feel free to write to the editor at editor@eestec.org or hwee.ang@ic.ac.uk.

Furthermore, if your LC have organised any events recently, or have taken part in an exchange with another LC, please also contribute an article about it to the newsletter. Last but not least, if your LC is organising an event for the future, do not fail to grab the chance to publicise it. Write to the editor now!

Yours sincerely,
Denise
EESTEC newsletter editor

Accepted letters may be edited for length and clarity.

CONTACT INFO

Editor

Denise (Hwee Peng, Ang)

denise_hong@hotmail.com or editor@eestec.org

The Board

Iikka Väkiparta
Enrico Natalizio
Alessia Toni
Paul Oudshoorn

board@eestec.org

Local Committees

Aachen, Bologna, Budapest, Cosenza, Cottbus, Craiova, Delft, Eindhoven, Helsinki, Krakow, Istanbul, Lausanne, Ljubljana, London, Madrid, Malta, Munich, Oulu, Paris, Prague, Reggio Emilia, Rijeka, Sevastopol, Surrey, Tampere, Twente, Vienna, Zurich
<name of LC>@eestec.org

for more information, see *<http://www.eestec.org/mailguide.html>*

EESTEC International

c/o AMIV an der ETH
Universitaetstrasse 19
8092 Zürich
Switzerland
Tel. + 41 1 6324245
Fax + 41 1 2622072
E-mail: info@eestec.org
URL: http://www.eestec.org
FTP: ftp://ftp.eestec.org

EESTEC is represented in its member cities through Local Committees. The association's head office is located in Zurich, Switzerland. Please contact your LC regarding all matters at a regional level. Please contact the board for all international matters.

INVITATION TO THE CONGRESS

Dear EESTEC member!

Just before the holidays here is the official announcement to the EESTEC congress!

LC Delft would like to invite 2 representatives of your Local Committee to attend to the congress to be held in Delft from March Sunday 19th - Saturday 25th of 2000. Please discuss in your LC which members will be coming and let us know.

For planning and further contact you need to respond to this invitation before the 10th of January 2000 by filling in the questions on the form on our website: http://etv.et.tudelft.nl/commissies/eestec/lcform.html

Also, we want to ask you if you can send an email with attached the pictures of the participants to pchoudshoorn@hotmail.com We want to use this information and photographs to make a list of participants during the congress.

After applying you will of course receive the detailed information. Might there be any questions, feel free to ask them to me: paul@etv.et.tudelft.nl

That is it for now, have a great time next weeks and I look forward to hearing from you soon !

Paul Oudshoorn
Congress Organising Committee

CALENDAR

22/1/00 to 29/1/00	19/3/00 to 25/3/00	3/4/00 to 9/4/00
Oulu - The City of Winter and Technology LC Oulu Workshop	**Congress** to be held in Delft	**Exchange** LC Vienna
May 2000	**1/5/00 to 5/5/00**	**7/5/00 to 13/5/00**
Exchange LC Reggio Emilia	**Exchange** LC Twente	**Electromagnetic Pollution** LC Bologna Workshop
28/5/00 to 3/6/00	**29/5/00 to 4/6/00**	**October 2000**
Internet Improvements LC Cosenza Workshop	**Exchange** LC Vienna	**Mechatronics** LC Munich Workshop

If your LC is organising an event, please send an email to the editor so that it can be included in Calendar. Please indicate the time and venue of the event.


eestec
Electrical Engineering STudents European assoCiation
Founded in 1986, EESTEC is an organization that promotes the exchange of ideas, and the development of international contacts, between engineering students and companies throughout Europe. EESTEC now has 28 branches in 18 different countries.
Oulu
Tampere
Helsinki
London Surrey
Delft
Twente
Eindhoven
Aachen
Cottbus
Prague
Krakow
Paris
Munich
Vienna
Budapest
Zurich
Lausanne
Ljubljana
Reggio Emilia
Rijeka
Bologna
Craiova
Sevastopol
Istanbul
Madrid
Cosenza
Malta
EESTEC International
c/o AMIV an der ETH
Universitaetstrasse 19
8092 Zürich
Switzerland
Tel. +41 1 6324245
Fax +41 1 2622072
E-mail: info@eestec.org
URL: http://www.eestec.org
FTP: ftp://ftp.eestec.org