

Report: ENS visit, May-June 2003

Sourav Chakraborty

As part of ENS-CMI exchange programme, I visited École Normale Supérieure (Paris) during the months of May and June in the year 2003. I arrived Paris on 3rd May and left for India on 27th of June. Along with me were two of my batchmates Snigdayan Mahanta and T. Saravanan. The stay in Paris lasted for around 8 weeks and it was an academically very fruitful period and also I enjoyed the stay.

Work My work was to study the problem of Editing Distance in Trees. This problem is very important mainly from the point of view of its applications to various other subjects (This problem has huge application in data handling, molecular biology and chemistry) My guide Dr. Anne Micheli who works in Université Paris 7, Jussieu, introduced me to this subject and guided me throughout my stay. Initial part of my stay was spent on reading various papers regarding this problem. Our main aim was to find better algorithms for the problem and to try to generalise the problem to higher classes of graphs. The later part of my stay was spent in trying to solve the problem in a different way and trying to generalise it. We discussed with Dr. Dominique Rossin of Université Paris 7, who was also interested in the problem. We also had discussions with Dr. Dominique Poulalhon and Dr. Daniel Kroh on this problem. Infact we have proceeded quite a bit in our work and we plan to continue working on this problem in future and we expect to get some really interesting and better solution for the problem.

Lectures Attended

In my stay in Paris I attended quite a few lectures and seminars which were going on in and around Paris at that time. The prominent ones are :

- 1) “Diophantine version of Kolmogorov complexity” by Yuri Matiyasevich (held in Chevaleret).
- 2) “Constructing Models with a Decidable Monadic Second-Order Theory” by Wolfgang Thomas (held in Chevaleret).
- 3) “MGS : un langage pour transformer des collections complexes” by Julien Cohen (held in ENS as a part of “séminaire des élèves”).
- 4) One “Seminaire Bourbaki” by Itenberg Ilia on “Amibes de variétés algébriques et dénombrement de courbes [d’après G.Milhalkin]”.

Presentations

Other than the regular lectures given to my guide about various papers on the problem I was doing I also gave a talk on “Editing Distance in Trees” as a part of “séminaire des

élèves” to the informatique department of ENS. This was a slight modification of the talk that I gave to DMA as a part of the exchange programme.

Financial Aspect The airfare was paid by Chennai Mathematical Institute, Chennai and our stay in Paris was hosted by ENS. On arriving to Paris I was given a sum of 895 euros for my expense during these two months. Apart from this we were given a book grant of 300 euros. We were also given a total of 62 coupons for the ENS canteen (pot) which was enough for our stay.

Conclusion Overall, the stay in Paris was really a pleasant one. I also visited Max Plack Institute for Informatique in Germany and also attended a seminar there. I visited many places in and around Paris and it was a wonderful experience. I sincerely thank my advisor, Dr. Anne Micheli for the excellent guidance she has given me and I want to keep in touch with her and try to work further on the problem that I have studied during this stay. I also thank Dr. Stephane Fischler for helping me a lot in the two months. I thank all the other people of ENS for making our stay a really pleasant one. Finally I thank my institute Chennai Mathematical Institute without whom I would not have got the opportunity to come to ENS for this exchange programme.

(Sourav Chakraborty)