

The goal of the second project is study some papers relevant to the course, in preparation of the final project. Below are some suggested papers [1, 2, 3, 4, 5, 6, 7, 8, 9, 10].

If you have other papers you find interesting, please let me know. You could also place the focus of your study on background papers, publications cited by the authors of the suggested papers.

### **The deadline is Friday 4 April 2014 at 2PM**

The deliverable of this project is a technical report of at least five and not more than ten pages long. There are three items the report must contain.

In this report you must define the problem and describe *in your own words* the results of the paper you have chosen. When copying from a paper – e.g., the statement of a theorem – you must explicitly cite the paper.

Secondly, the report should describe a computational experiment illustrating the most important aspects discussed in the paper. An appendix to the report can be the output of a Sage or Python script, or the listing of a program on some examples.

The third and last element of the report is the conclusion. This should read like an executive summary. It should be brief, but completely self-contained. Summarize in one or two paragraphs what is most important about your project.

Feel free to come to my office for help.

## References

- [1] F. Aroca, G. Ilardi, and L. López de Medrano. Puiseux power series solutions for systems of equations. *International Journal of Mathematics*, 21(11):1439–1459, 2011.
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- [3] A.N. Jensen, H. Markwig, and T. Markwig. An algorithm for lifting points in a tropical variety. *Collectanea Mathematica*, 59(2):129–165, 2008.
- [4] E. Katz. A tropical toolkit. *Expo. Math*, 27:1–35, 2009.
- [5] B. Ya. Kazarnovskii. Truncation of systems of polynomial equations, ideals and varieties. *Izvestiya: Mathematics*, 63(3):535–547, 1999.
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- [8] J. McDonald. Fractional power series solutions for systems of equations. *Discrete Comput. Geom.*, 27(4):501–529, 2002.
- [9] S. Payne. Fibers of tropicalization. *Mathematische Zeitschrift*, 262(2):301–311, 2009.
- [10] T. Shibuta. Irreducibility criterion for algebroid curves. *Math. Comp.*, 82(281): 531-554, 2013.