



ECRTS 2004 and WCET 2004

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Introduction

The 16th Euromicro Conference on Real-Time Systems (ECRTS 04) and the associated 4th Intl Workshop on Worst-Case Execution Time (WCET) Analysis was held June 29 – July 2, 2004, in Catania, Sicily, Italy.

Since we were relatively new to the area of real-time systems and WCET analysis, this seemed to be a good opportunity to get an overview of current research.

We were also looking forward to travelling to a conference in Italy instead of USA since we would not suffer from jetlag once we were back in Sweden.

WCET Workshop

As we did not foresee any trouble travelling within Europe, we planned to arrive in Catania the day before the workshop. Unfortunately, the plane taking us to Milano collided with a fence just before takeoff in Stockholm. Not a big collision, but nevertheless it delayed us for three hours – enough for us to miss our connecting flight to Sicily. As a consequence we were delayed one day and did not arrive to the workshop until lunch time which meant that we missed two out of three sessions.

The third session was about WCET calculation methods. Among the presented papers, *Measurement-Based Worst-Case Execution Time Analysis using Automatic Test-Data Generation* by Kirner, Puschner and Wenzel was perhaps the most interesting. It addressed the problem of finding accurate timing models for processors. Their approach is to use automatic generation of test data to find instruction timing for code sequences.

ECRTS Conference

The conference covered a wide range of different real-time subjects, altogether 12 sessions during three days.

In a work in progress session, Nasr et. al. used Uppaal to express different scheduling policies within the Cotre project. This was of some interest to us since we had been working with Uppaal in an ARTES++ course.

One of the conference's sessions covered timing and execution-time analysis. A paper worth mentioning is David and Puaut's *Static Determination of Probabilistic Execution Times* where they work with probabilistic distributions of execution times, instead of conventional worst-case execution times.

Another interesting session covered the topic of energy-aware real-time computing. The three papers presented covered topics such as dynamic voltage scaling, slowdown factors, static and dynamic algorithms, and systems with both predictable and unpredictable workload.

Finally, we found one of the keynote speakers, professor Alan Burns, very interesting. Especially his introduction to Ada 05 with features like timing events, dynamic priorities and support for EDF dispatching.

Catania

Downtown Catania was rather charming, especially after eight o'clock in the evening when many back streets were closed down for car traffic, and the restaurants spread out onto the streets. The food was as expected very good (even though they seemed to have problem making a decent pizza). The weather in Catania was warm and sunny; this was appreciated by Joakim while Linus preferred the climate on Etna.

Conclusions

This was our first conference in the area and we believe that it gave us a good overview of not only current research, but also over different research groups.

A conference also provides the opportunity to meet new people and this conference was no exception. The relatively small number of participants (perhaps 150 persons) made the atmosphere relaxed and informal, something that encourages people to talk.

Worth mentioning was also that a large number of Swedish participants, including a few more ARTES/ARTES++ students besides the authors.

Finally, a few words on the subject of jetlag. It seems that jetlag is not limited to travels across time zones – travels across climate zones are just as bad. A northbound flight from the subtropical Catania to the subarctic Luleå can easily be compared to an eastbound flight from New York to Stockholm.