Blessed with fine weather seasoned by one or two summer showers, CPM 2007 was held on the beautiful campus of the University of Western Ontario, cochaired by Bin Ma & Kaizhong Zhang, and organized by Roberto Solis-Oba & Kaizhong Zhang, all of UWO’s Computer Science Department.

Established in 1990 (visit the archive at http://www.cs.ucr.edu/~stelo/cpm/), CPM was the first conference to specifically target the theory and practice of pattern matching; other closely-related meetings dealing with this expanding area of research now include (apologies to any missed)

- ECCB: European Conference on Computational Biology;
- LATA: International Conference on Language & Automata Theory & Applications;
- LSD: London Stringology Days;
- PSC: Prague Stringology Conference;
- SPIRE: Symposium on String Processing and Information Retrieval (originally South American Workshop on String Processing);
- WABI: Workshop on Algorithms in Bioinformatics;
- WORDS: International Conference on Words.

In its abstract sense, combinatorial pattern matching (cpm) deals with the fundamental computer processing problem of identifying patterns in linear and non-linear structures such as strings, trees and graphs. These patterns may be specific (find all (exact or approximate) occurrences of $p = aba$ in $x = aababaaba$) or generic (compute the suffix array of $x$, find all the repetitions in $x$). The establishment of cpm as a basic discipline of computer science perhaps arose mainly out of formal language theory (see this Bulletin’s longstanding column of the same name), strongly influenced by applications to computational biology stemming from Crick & Watson’s 1952 discovery that a genome can be treated as a string on a four-letter alphabet. Thus cpm and bioinformatics were born at just about the same time. The steady expansion of cpm research can also be traced to a
succession of new application areas: text processing, data compression, information retrieval, data mining, internet search, security monitoring, software clone detection, and so on.

CPM 2007 was attended by 77 scientists from institutions in 18 territories: Australia, Canada, Chile, China, Denmark, Finland, France, Germany, Hong Kong, Israel, Italy, Japan, Korea, Poland, Russia, Taiwan, the UK and the USA. There were two invited talks. The first, by Tao Jiang (University of California, Riverside) described recent progress with a basic problem of genomics, the assignment of orthologous genes between genomes. The second, by Muthu Muthukrishnan (Rutgers University & Google Inc.) was broader in scope, providing an overview of classic algorithmic problems of stringology, especially those related to the use of suffix trees and suffix arrays. A third invited talk, scheduled to be given by Frances Yao (City University of Hong Kong) was cancelled because the speaker was prevented by flooding from travelling. However, the time slot was replaced by a lively problems session, chaired by Ian Munro (University of Waterloo); two problems discussed at some length were

* a tight upper bound on the number of maximal periodicities in a string;
* the exact complexity of pattern matching with don’t cares.

The meeting included a total of 32 contributed talks distributed over sessions entitled

* Algorithmic Techniques;
* Approximate Pattern Matching;
* Computational Biology;
* Data Compression;
* Pattern Analysis;
* Suffix Arrays & Trees.

These topic areas reflect well the preoccupations of the Symposium’s participants.

The best paper award went to “Speeding up HMM decoding and training by exploiting sequence repetitions” by Shay Mozes and Oren Weimann of MIT Computer Science & Artificial Intelligence Laboratory, and Michal Ziv-Ukelson of Tel-Aviv University. A complete list of titles and authors of CPM 2007 papers is available on the website: http://www.csd.uwo.ca/CPM2007/
A delightful feature of the Symposium was the excursion to the charming and serene town of Stratford, Ontario, since 1953 the home of the Shakespearean Festival of Canada (its original name), just an hour’s drive away through the lush mid-summer agricultural heartland of southwestern Ontario. Participants were given a choice between attending performances of *The Merchant of Venice* or *Othello*. Drama criticism is beyond the scope of this report (and the competency of its author), but reviews may be found at

http://www.thespec.com/article/207182
http://www.thespec.com/article/209435

In the week prior to CPM 2007, a small warm-up event, rather immodestly entitled StringMasters@McMaster

http://www.cas.mcmaster.ca/~bill/announce.pdf

was held 90 minutes’ drive down the road at McMaster University, where it was hosted by the Algorithms Research Group, Department of Computing & Software, and organized (well, disorganized) by the author of this report. Seventeen participants from six countries fronted up and worked in an agreeably collegial fashion on a variety of fascinating string algorithm problems. Allow me to express the hope that this initiative will become a tradition!

CPM 2008 will be held at the Università di Pisa, cochaired by Paolo Ferragina of Pisa and Gadi Landau of the University of Haifa, an experience already being anticipated.