

Nan Zang

Ph.D. Candidate

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Require sponsorship to work in U. S.

- Objective** Full time software engineer focused on algorithm design and problem solving.
- Research interests** Applied Algorithm Design, Combinatorial Algorithm and Optimization.
- Education**
- Ph.D. Computer Science (Expected graduation date: June, 2008)**
University of California, San Diego(2003 - 2008)
GPA: 3.98/4.0
 - M.S. Computer Science**
University of California, San Diego (2003 - 2005)
Title of Research Exam (Thesis): “*JET Multiprocessor Scheduling Problems*”.
 - B.E. Computer Science**
University of Science and Technology of China, Hefei, China (1999 - 2003)
GPA: 91.3/100
Title of Thesis: “*Approximation scheduling algorithms on two machines with availability constraints*”.
- Papers and preprints**
- “Enumerating split-pair arrangements” (with R. Graham). *Journal of Combinatorial Theory, Series A*, Volume 15, Issue 2 (February), 293-303.
 - “Approximately optimal trees for group key management with batch updates” (with Minming Li, Ze Feng, R. Graham and Frances F. Yao). Submitted.
- Current Projects**
1. Optimal trees for group key management with batch updates.
Our goal is to find an optimal tree structure to manage group keys used by the secure multicast problems. This includes building the mathematical model, running simulations, analyzing the experimental data to verify the data confirms our predictions, finally, designing efficient algorithms to construct the optimal key trees. This arose from a joint project with City University of Hong Kong (with R. Graham and Frances Yao).
 2. Enumerating split-pair arrangements.
Split-pair problem arose in analysis of the recent developed robotic scheduling algorithms. Briefly, an arrangement of $\{1, 1, 2, 2, \dots, k, k\}$ is a sequence $(a_1, a_2, \dots, a_{2k})$ with the restriction that, between any two occurrences of i , there is one and only one occurrence of $i+1$, $i = 1, 2, \dots, k-1$. Our goals are to enumerate the number of all possible split-pairs as a function of k , and to connect these arrangements with combinatorial lists which have previous appeared in the literature. (with R. Graham).
- Related coursework** Algorithm Analysis, Combinatorial Optimization, Modern Cryptography, Linear Programming, Computability and Complexity, Online Learning.
Methods in Combinatorics, Mathematical Statistics, Applied Statistics, Probability, Discrete Mathematics.
Computer Vision, Artificial Intelligence, Computer Architecture, Operating Systems, Distributed Computing, Computer Networks.
- Skills** C, C++, Java, SQL, Lisp, Pascal, Assembly (8086/80386), Maple, LaTeX, R.
Fluency in spoken & written English and Chinese (Mandarin).

**Work
Experiences**

Research Assistant @ UC San Diego

September 2004 – present

Advisor: Professor Ron Graham

Research on applied algorithm design and combinatorial problems.

Teaching Assistant @ UC San Diego

Four quarters of teaching assistant experience for the courses Theory of Computation, Operating System, Algorithms and Discrete mathematics.

Responsibilities include leading discussion sections, holding office hours, providing solutions to homework, and grading.

**Honors and
Scholarship**

University of California at San Diego Fellowship (09/2003-09/2004)

The Huawei Scholarship (07/2002)

The Microsoft Scholarship (07/2001)

References

References available upon request