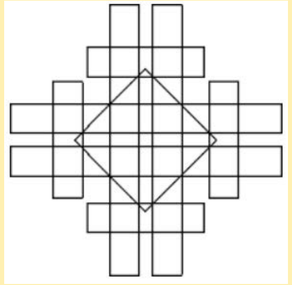
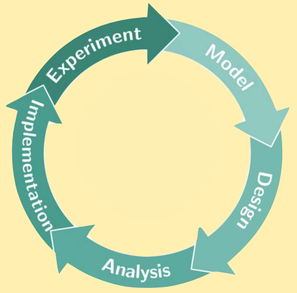


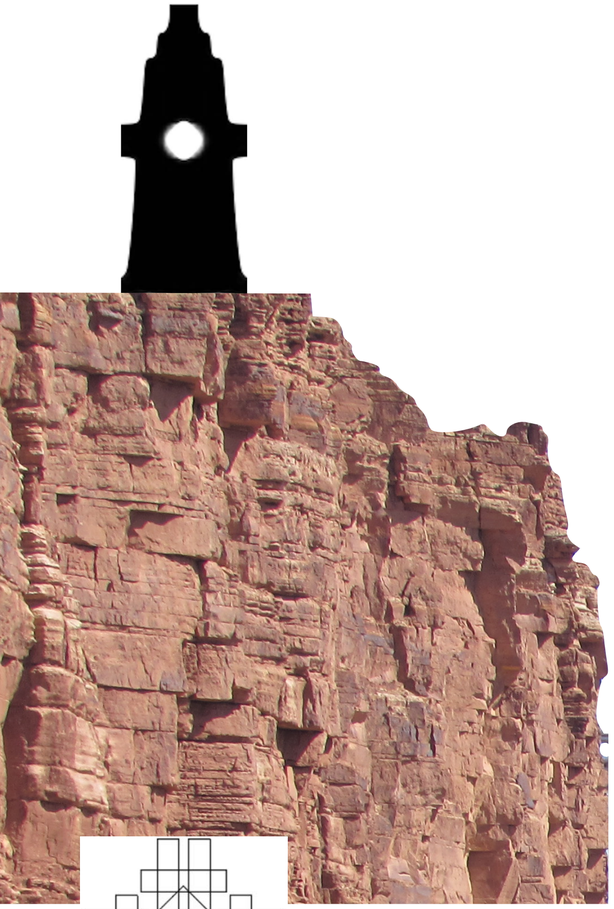
Theory and Practice: Bridging the Gap at SoCG?

Sándor Fekete, Private Citizen



Computational Geometry and Applied Sciences

Computational Geometry



Applied Sciences

Some History

Application Challenges to Computational Geometry: CG Impact Task Force Report

Report ID:
TR-521-96

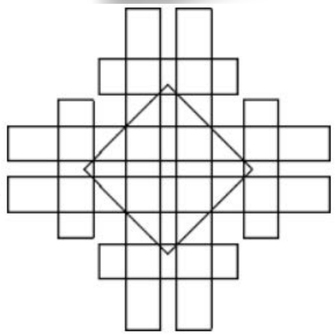
Authors:
Chazelle, Bernard

Date:
March 1996

Pages:
57

Download Formats:
[Postscript]

Date:
March 1996



Some History

Application Challenges to Computational Geometry: CG Impact Task Force Report

In the midst of its success, however, the field is standing at a crossroads. There are two options: CG can use its successes as justification for keeping the pursuit of theoretical investigations as the centerpiece of its agenda. Or it can move towards building an effective pipeline with geometric computing. In the first case, CG might simply fall out of the economic loop altogether: it might even shrink to the status of a recreational activity. In the second case, CG might grow to become as indispensable to geometric computing as, say, civil engineering is to bridge-building. The choice is for the CG community to make.

Download Formats:
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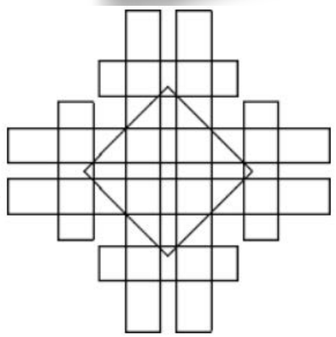


The Applied Track at SoCG: 1997-2001

1997, 13th SoCG
C. Hoffman (Applied Track chair)
Bernard Chazelle, Jung-Hong Chuang

1998, 14th SoCG
J. Rossignac (Applied Track chair)

1999, 15th SoCG
J. Canny (Applied Track chair)

2000, 16th SoCG
S. Fortune (Applied Track chair)

2001, 17th SoCG
D. Halperin (Applied Track chair)

September 22, 2004

"Applied" Papers at SoCG

Ernie's 3D Pancakes

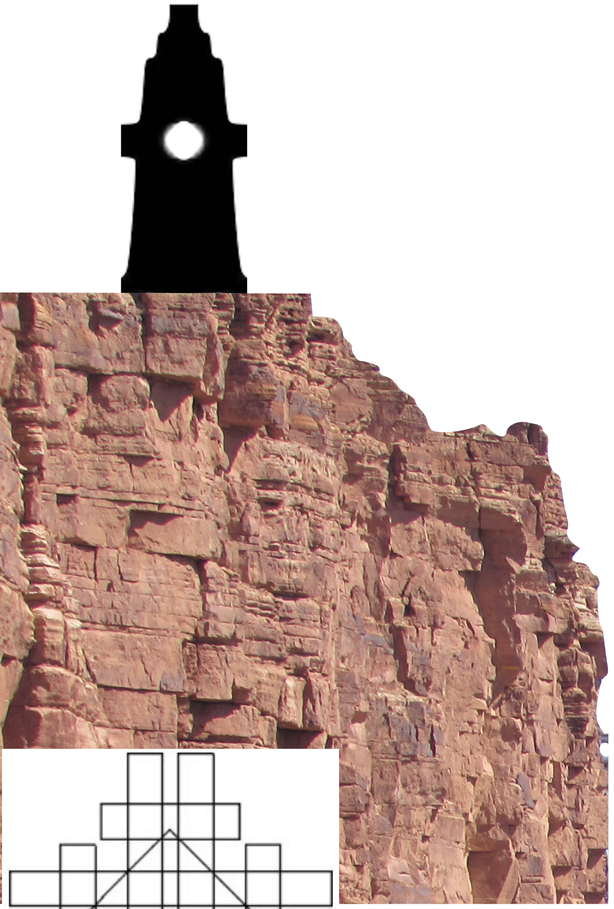
Let Σ be a combinatorial surface with n vertices, genus g, and b boundaries. Amen.

In its first year, the applied track was a roaring success, at least in terms of numbers. The conference received twice as many submissions as usual, and the program committee was forced to expand the conference to four days instead of the usual three to avoid parallel sessions. (The record number of submissions may also have been influenced by the fact that SoCG was held in the French Riviera that year.)

But over the long haul, the applied track at SoCG has been a train wreck. Some of this failure stems from our community's ~~intellectual snobbery~~ unmitigated gall. The applied track was *really* introduced to bring potential customers of computational geometry to SoCG to see that, really, we're useful, honest. "You've been doing it all wrong," we said. "Just explain your little geometric problem to us experts; we'll be able to solve it in no time, because we (unlike you) have the *right* tools."

Theory and Practice

Theory



Practice

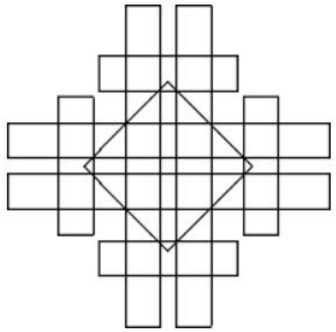
Updates!

Bernard Chazelle <chazelle@cs.princeton.edu> SoCG_SC 27. April 2024 um 17:33

Aw: SoCG and applications

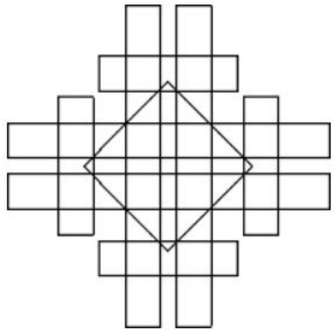
I strongly encourage you to do a new version of what I (and dozens of my friends) did 30 years ago. It's badly needed.

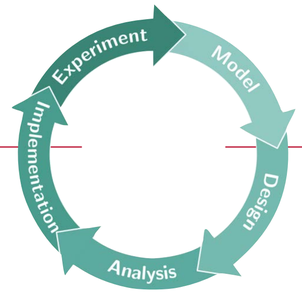
Being more open to applications is imperative. But there's also a thematic issue: SoCG features dozens and dozens of related problems, small islands in the ocean, all them kind of interesting in their own right. But what it's lacking



Options

1. **Do nothing**
2. **Theoretical approach:** Develop a perfect solution
3. **Pragmatic approach:** Give it a try, evaluate, refine





Issues and Synergies

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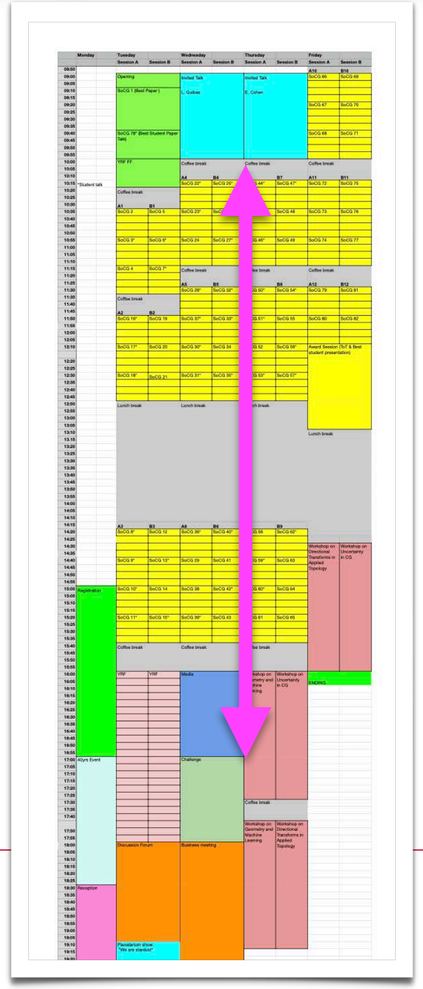
Space?

Computational Geometry:
Solving Hard Optimization Problems

Geometric Optimization Challenges



Advisory Board

- Bill Cook
- Andreas Fabri
- Dan Halperin
- Michael Kerber
- Philipp Kindermann
- Joe Mitchell
- Kevin Verbeek

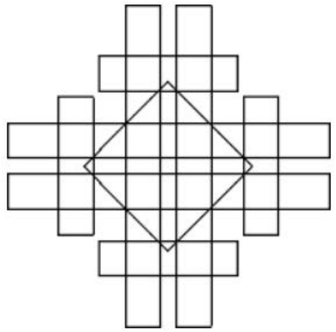
Model SODA/ALENEX

ACM-SIAM Symposium on Discrete Algorithms (SODA24)

January 7 - 10, 2024

SIAM Symposium on Algorithm Engineering and Experiments (ALENEX24)

January 7 - 8, 2024

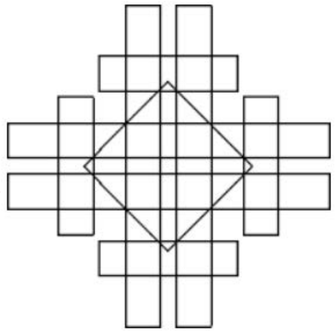


Model ESA

The European Symposium on Algorithms (ESA) covers research in efficient algorithms and data structures in computer science, discrete applied mathematics, operations research and mathematical programming. Starting from 2002, the symposium has two tracks:

- Design and Analysis Track Design and mathematical analysis of algorithms
- Engineering and Application Track Real-world applications, engineering and experimental analysis of algorithms
- New since 2022: Simplicity Track. Proofs or algorithms that show results (possibly already known) in a simple and elegant way

Each track has its own program committee. Papers are submitted to a particular track, but the committees have the right to move papers between tracks. The program committees selects best papers as well as best student papers. In 2014,



Model ESA

PC CHAIRS

- Inge Li Gørtz, Technical University of Denmark (Track A)
- Simon J. Puglisi, University of Helsinki (Track B)
- Martin Farach-Colton, Rutgers University (Track S)

Inge Li Gørtz, Martin Farach-Colton, Simon J. Puglisi, Grzegorz Herman:
31st Annual European Symposium on Algorithms, ESA 2023, September 4-6, 2023, Amsterdam, The Netherlands. LIPIcs 274, Schloss Dagstuhl - Leibniz-Zentrum für Informatik 2023, ISBN 978-3-95977-295-2

- Design and Analysis Track Design and mathematical analysis of algorithms
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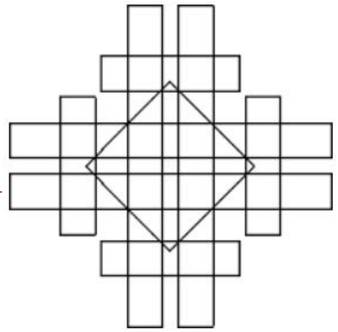


Proposal

1. Discuss: Now!

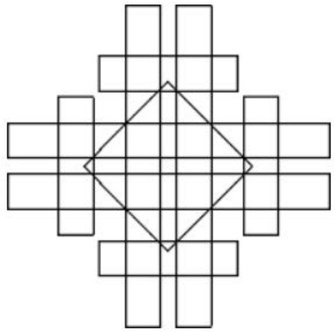
2. Task Force: Vote at BM, let new SC appoint TF

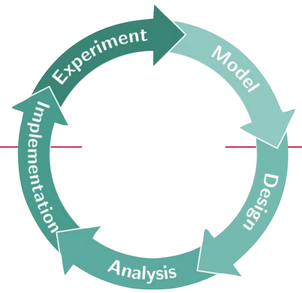
3. Elaborate: Continue discussion, work out details

4. Vote: Electronically, some time soon

5. Try out: When?

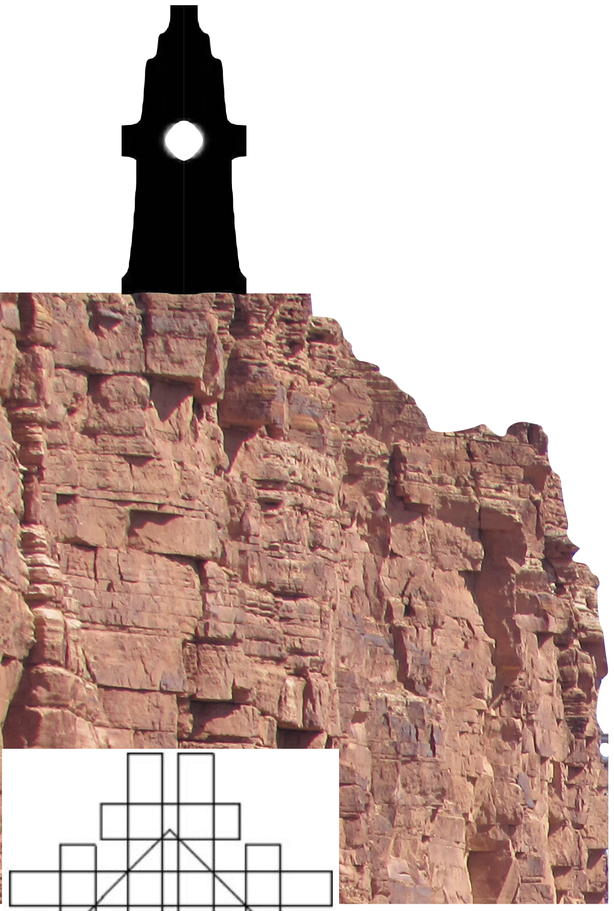
6. Improve: Try, evaluate, refine

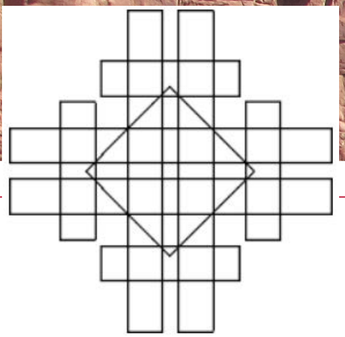




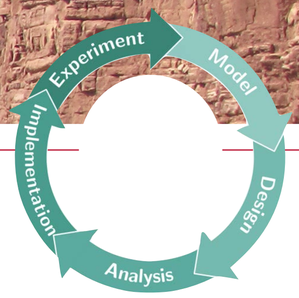
Let’s Give It a Try!

SoCG





Applications



Let’s Give It a Try!