Spatial Gems:
A New Type of Workshop at the SIGSPATIAL Conference

John Krumm
Microsoft Research
jckrumm@microsoft.com

Cyrus Shahabi
University of Southern California
shahabi@usc.edu

Andreas Züfle
George Mason University
azufle@gmu.edu

As researchers, we sometimes develop new approaches for solving spatial problems that fall between a textbook chapter and a research paper. These are fundamental techniques that would be useful to both researchers and practitioners. Until now, there has not been a good forum to disseminate these "spatial gems".

We are hosting a new workshop at the 2019 ACM SIGSPATIAL conference called "1st ACM SIGSPATIAL International Workshop on Spatial Gems (SpatialGems 2019" where we will collaboratively document and publish these techniques to benefit our field. We expect these contributions will be frequently read and referenced, so the workshop will focus on ensuring the quality and clarity of the papers. Instead of a sequence of presentations, workshop participants will primarily work together to edit each others papers. Were putting the "work" back in workshop.

Spatial Gems is modeled after the successful Graphics Gems book series. Spatial gems are not research papers. Instead, they are fundamental solutions for spatial processing that are likely to become part of a larger approach. While a gem may have already been published as a small part of a paper, extracting it into a gem makes it much more likely to be found and used by others. Examples of spatial gems include:

- Converting latitude/longitude coordinates into a locally Euclidean coordinate system

- Computing the mean and variance of speed from two noisy location measurements

- Tessellating the earth in a convenient, useful way

- Simplifying a latitude/longitude polygon while preserving its perimeter and area

- Matching two trajectories with dynamic time warping

- An R-Tree implementation in Python

- Random spatial point data generators including uniform, normal, and clustered

Each gem will be two to four pages long. Where appropriate, a good gem will include numerical examples so programmers can verify their implementations. The goal of a spatial gem is to convey a fundamental solution technique. A spatial gem is not a research paper with data and experiments. Spatial gems should be self-contained, not a pointer to code nor data, and not a summary of a research article. It is appropriate for a spatial gem to elaborate and focus on a technique that has already been published as part of a research paper as long as the gem contains proper attribution.

The result of the workshop will be a public archive of spatial gems. If the workshop continues in future years, we have the opportunity to produce a volume of accumulated gems. Because a large part of the workshop will be devoted to collaboratively editing the submissions, we will require all papers to be submitted as a shared LaTeX project on Overleaf (www.overleaf.com). At the workshop, we will have a sequence of editing sessions where authors will be paired with other authors to edit each others submissions. The goal of these sessions is to iterate toward a high-quality final paper. The workshops co-organizers will review the submitted papers and participate in the editing sessions.

There are more details about the workshop at www.spatialgems.net. Submissions are due on 16 August 2019. We invite you to participate. If you have an idea for a spatial gem, please feel free to contact us to discuss whether or not it would be appropriate for the workshop.