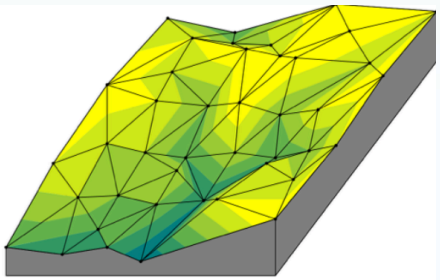
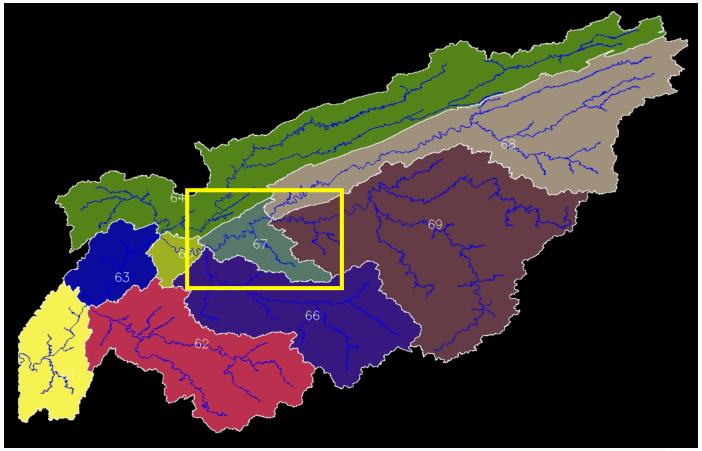
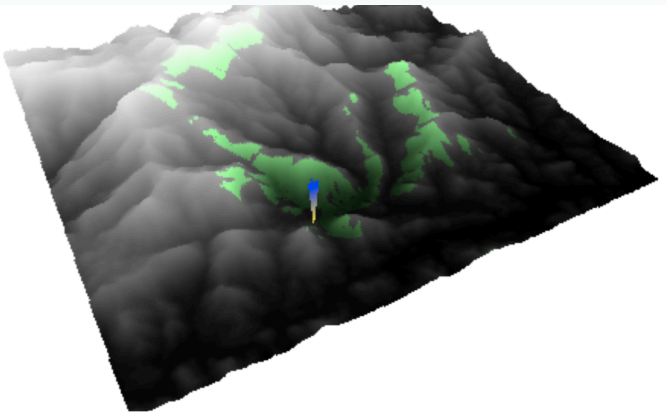
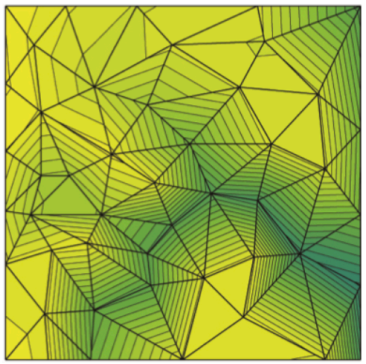


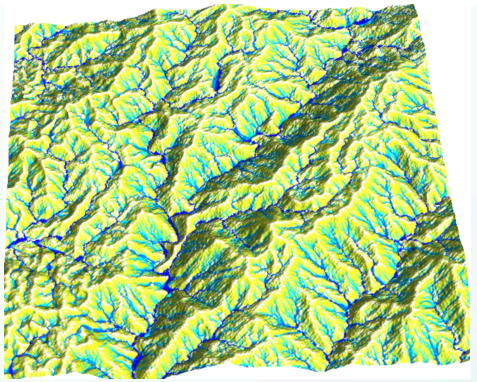


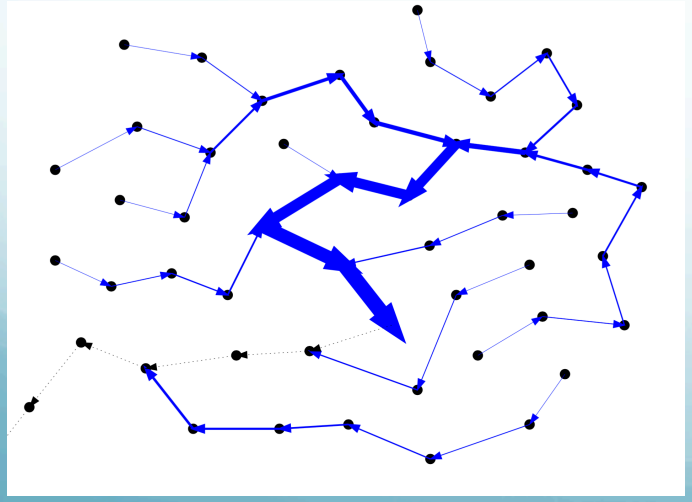


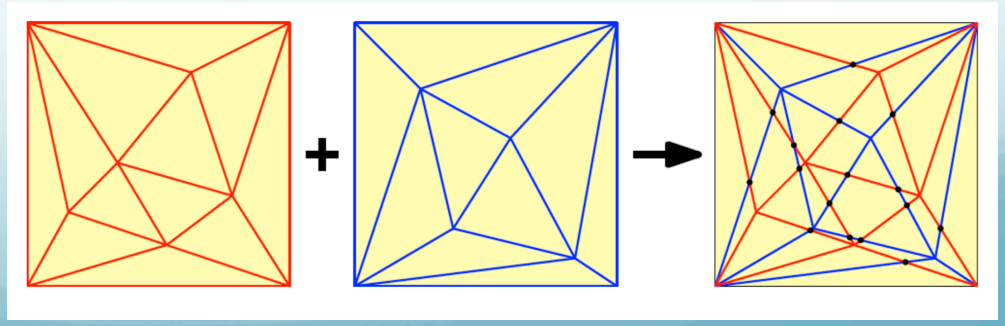


Laura Toma:

Applied Algorithms





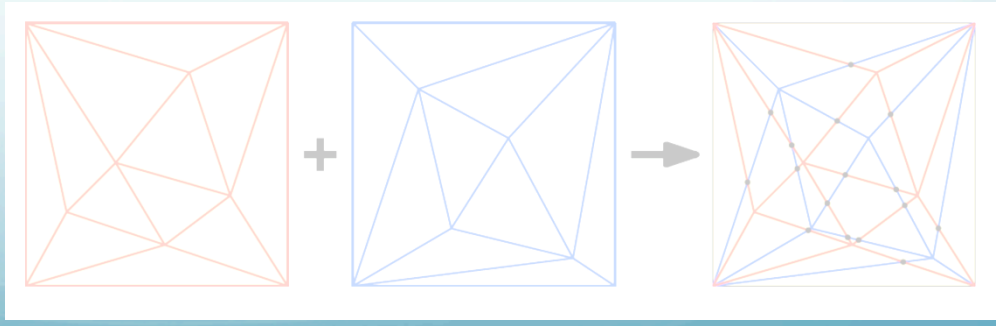


Terrain modeling in GIS

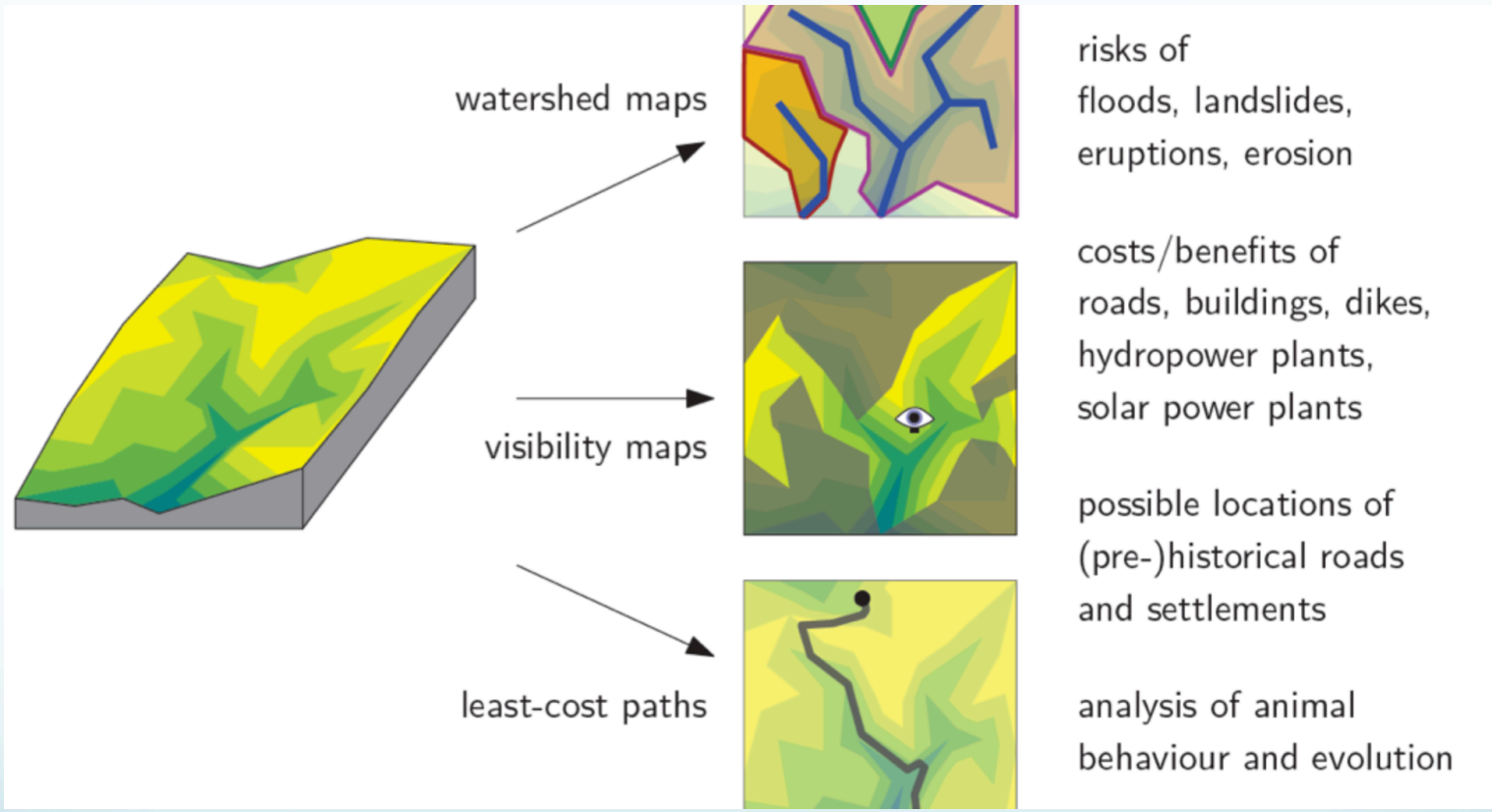
Algorithms for large data

Algorithm engineering

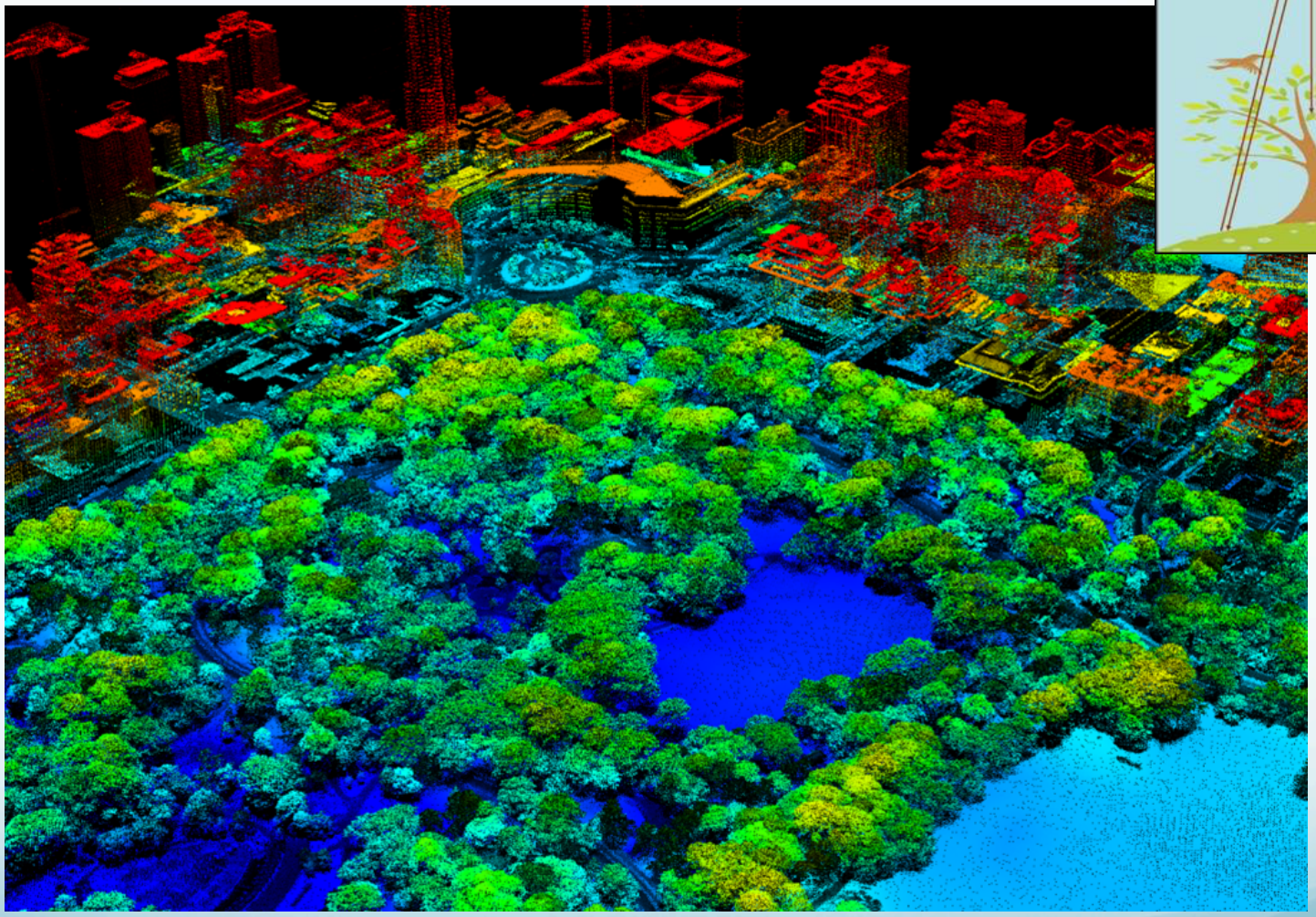
High performance computing



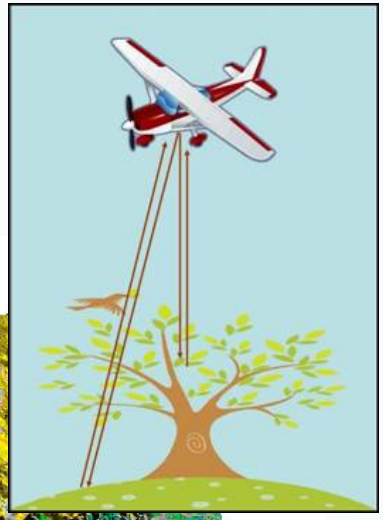
Terrain Modeling in GIS

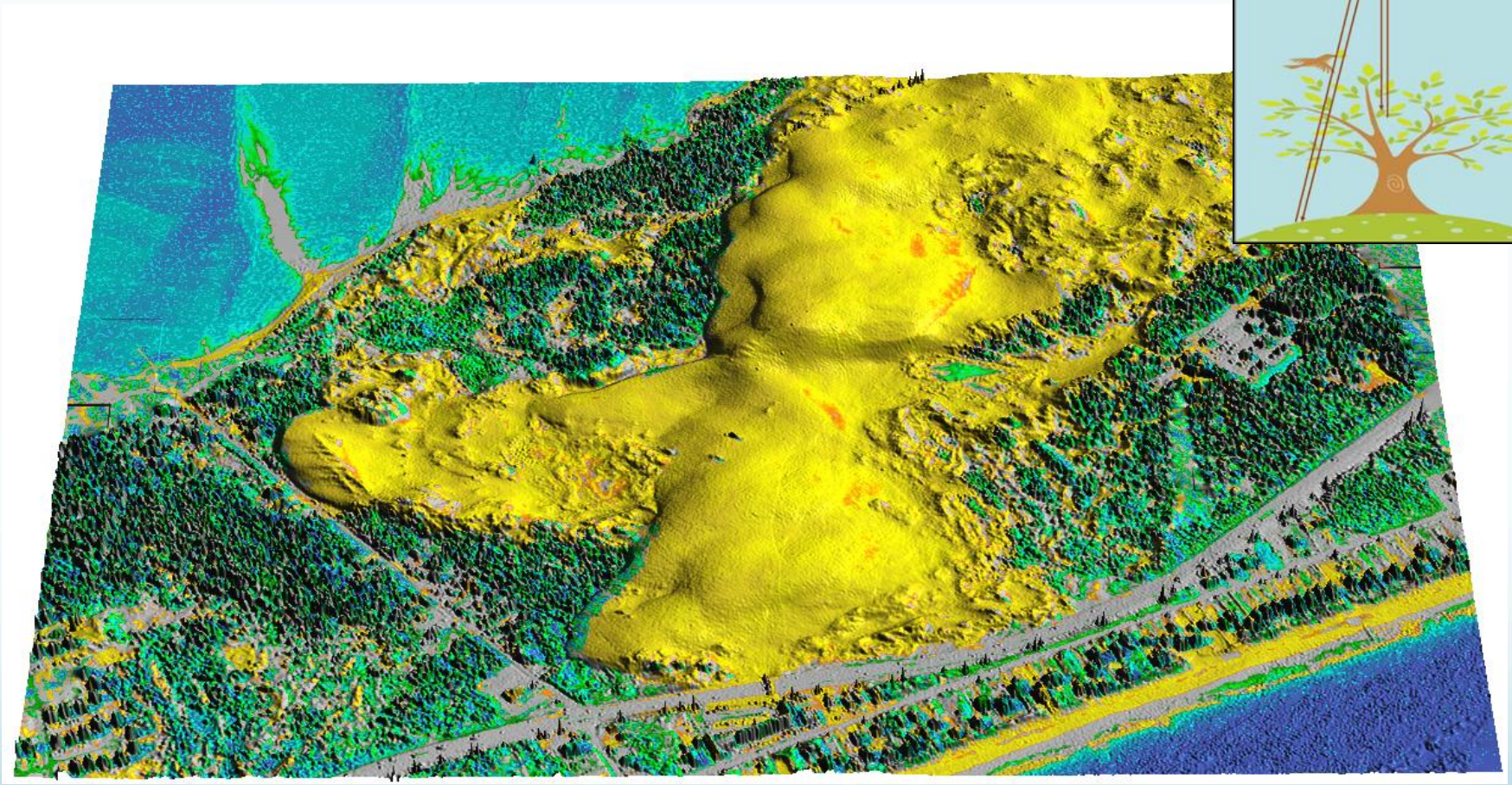


Large data

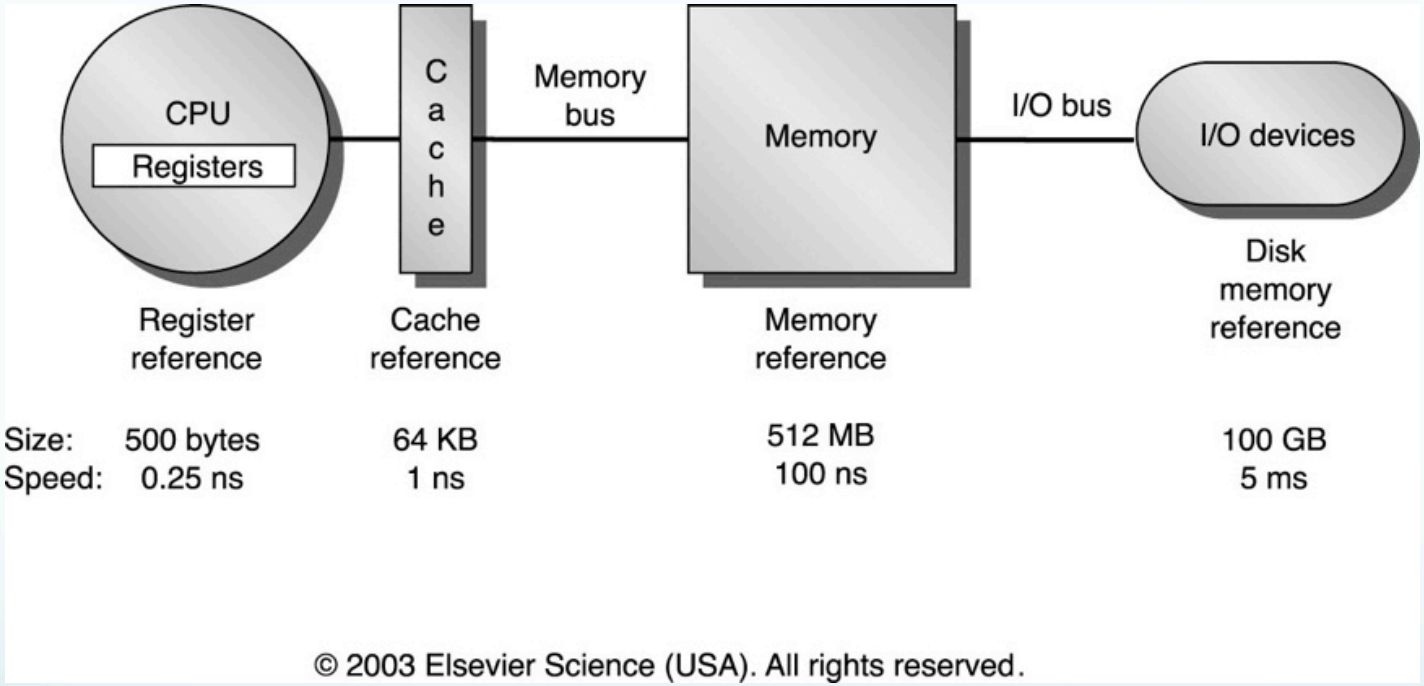


Large data

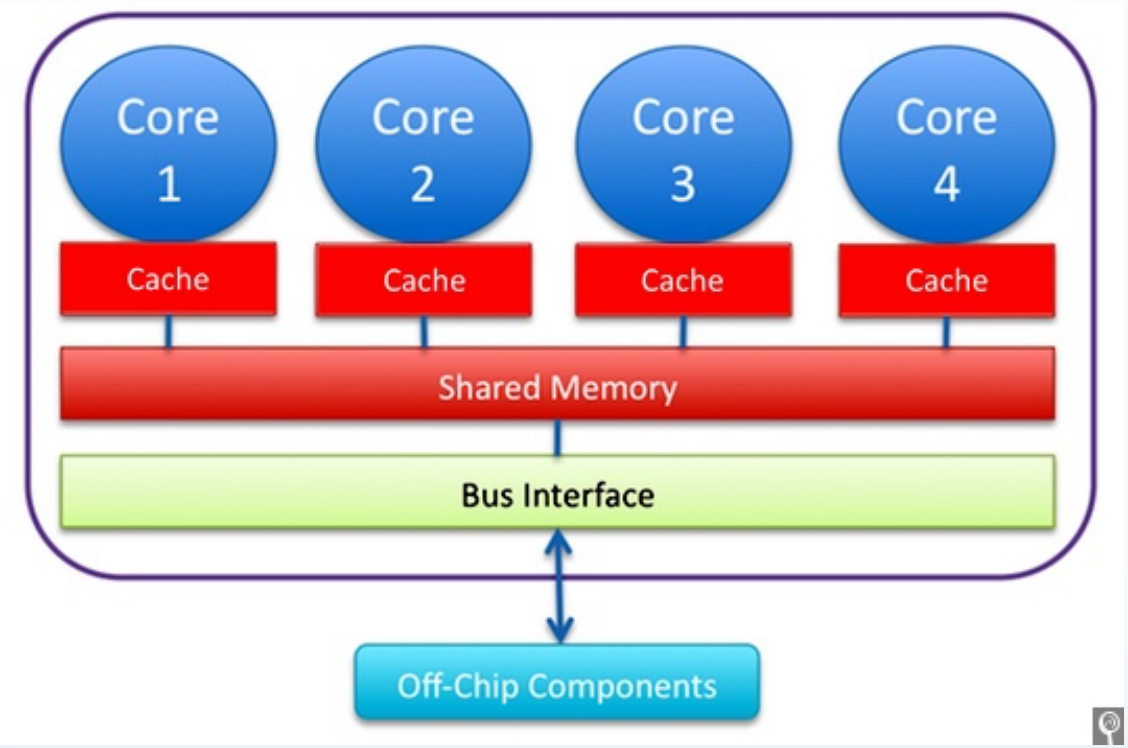




Large data

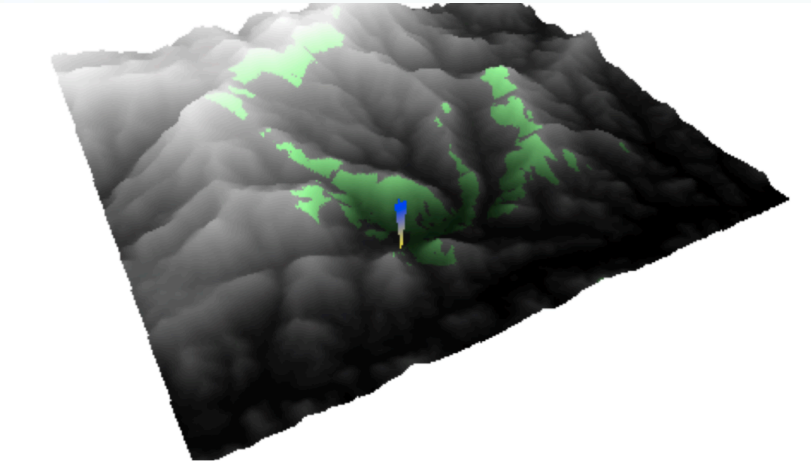


High performance computing



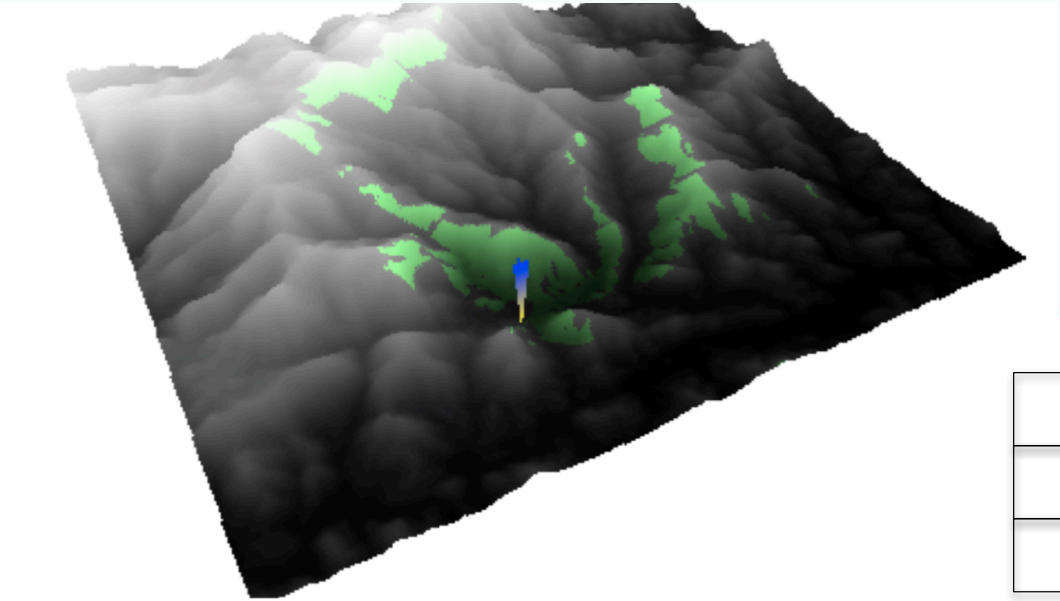
Projects

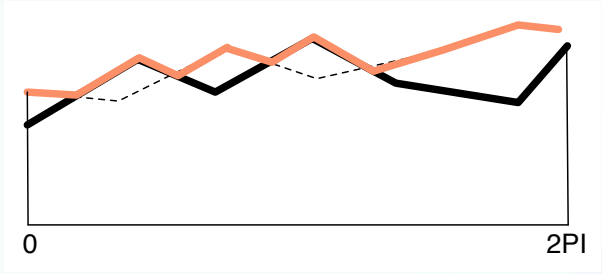
- Visibility on terrains
  - Understanding movement
  - Visualization
  - Multiple viewsheds
  - Finding point of max/min visibility efficiently
  - Find top 10% points with largest visibility

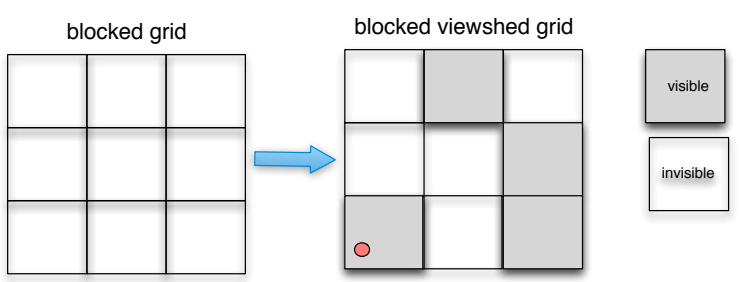


Projects

- Computing viewsheds in sub-linear time
  - previous: Kevin Zmozinsky, Danny Byrnes

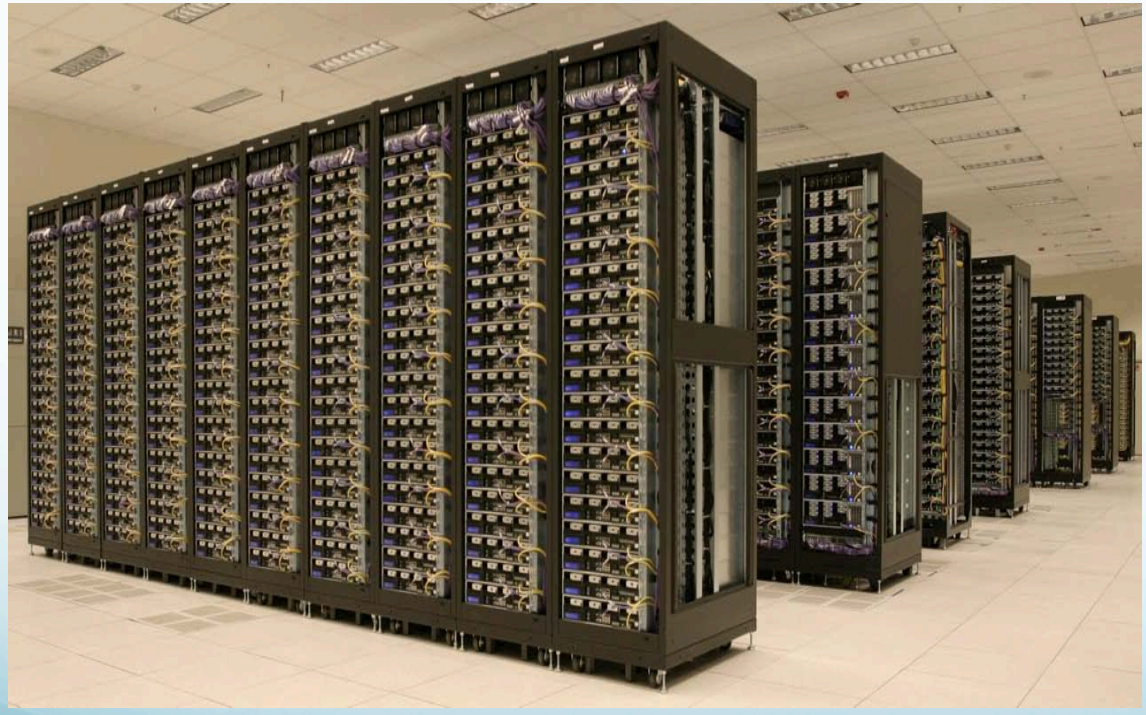






Projects

- Computing viewsheds in parallel
  - previous: Tucker Gordon, Colin Reynolds, Andrew Murowchick



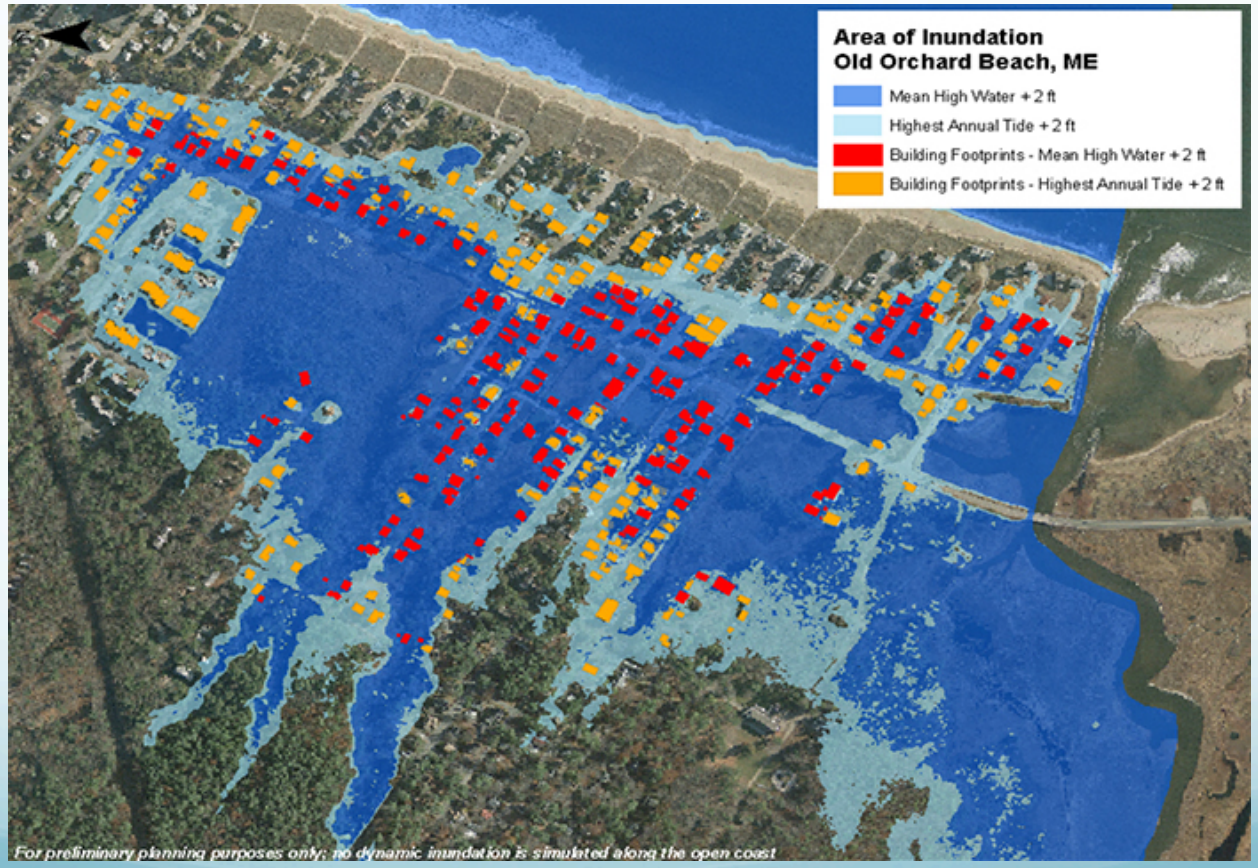
Bowdoin computing grid: 16, 32 and 40 core machines, 128GB RAM >500 cores!

Projects: with Eileen Johnson (ES)

- Simulate Coast of Maine sea level rise using LIDAR data

Projects: with Eileen Johnson (ES)

- Simulate Coast of Maine sea level rise using LIDAR data



Projects: with Eileen Johnson (ES)

- Simulate Coast of Maine sea level rise using LIDAR data
  - Large data
  - Parallel