

Parallel Fringe Search

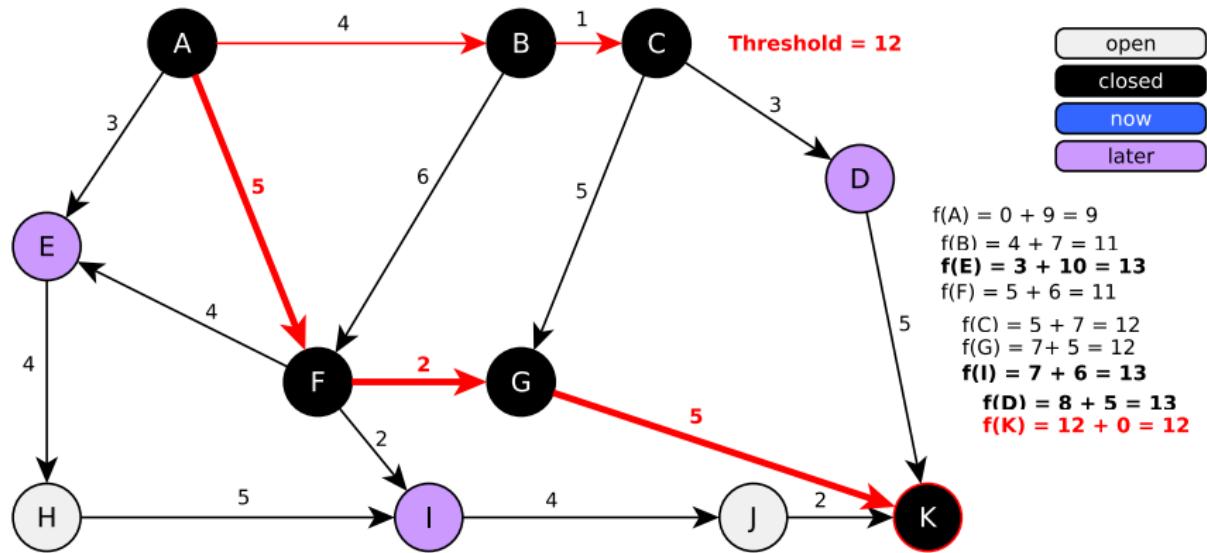
Christian Zeman & Lukas Mosimann

ETH Zürich

Design of Parallel and High-Performance Computing

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Fringe Search



Project Status

What we have done so far:

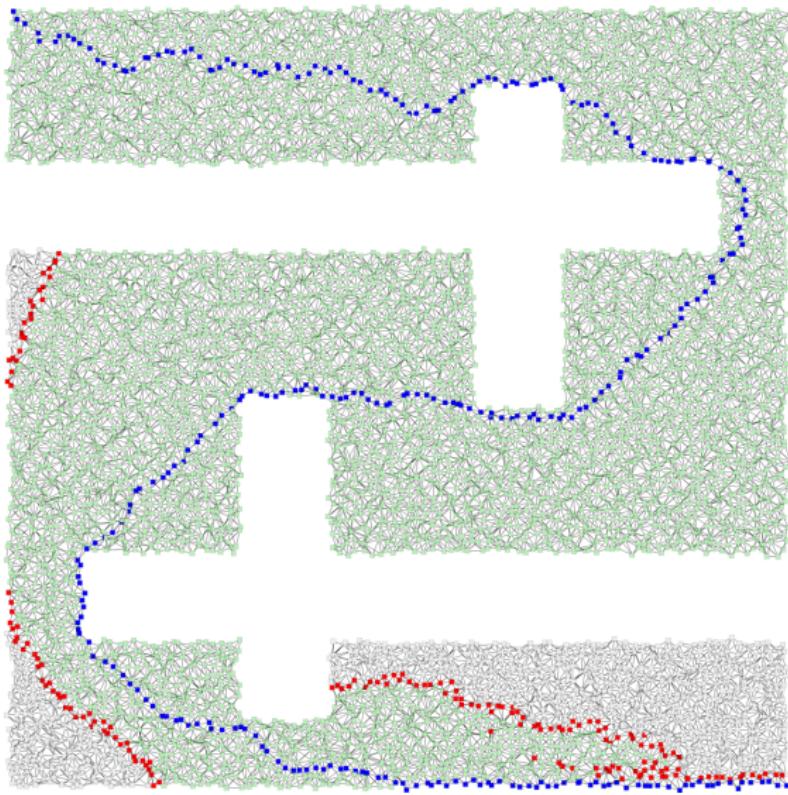
- Serial fringe search implemented
- Benchmarked against A* from Boost Graph Library
- Ran it with different thresholds

Project Status

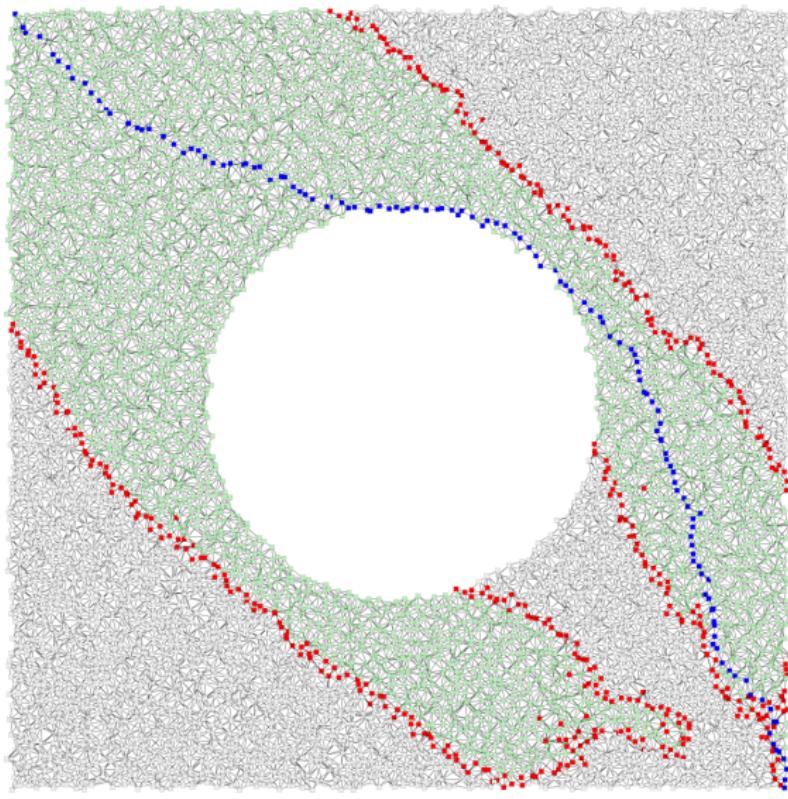
What we still have to do:

- Implement parallel version
- Benchmarking (strong/weak scaling)
- Threshold fine-tuning
- Write report

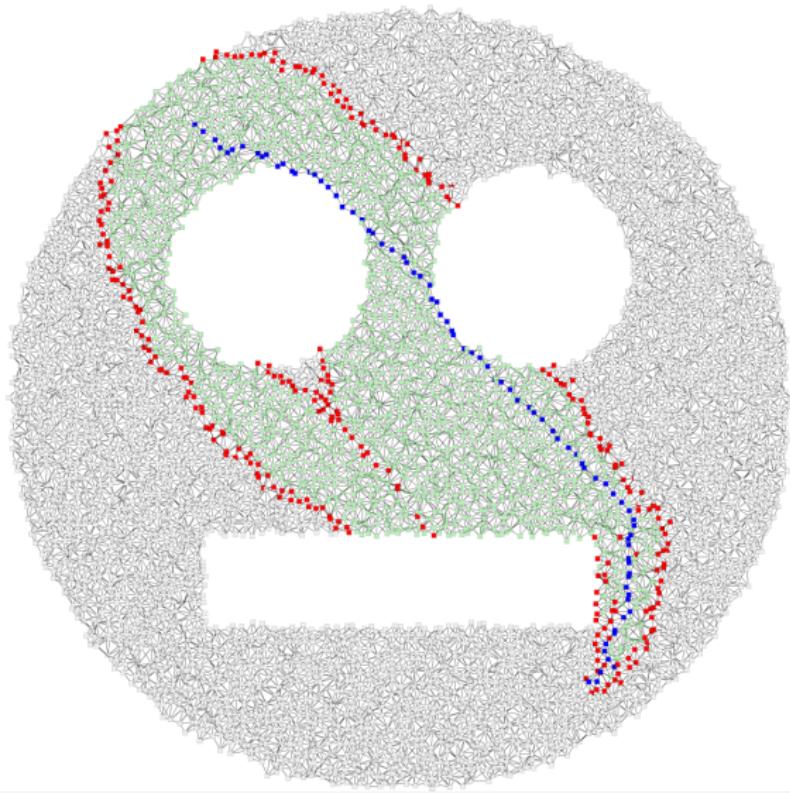
Some benchmark graphs...



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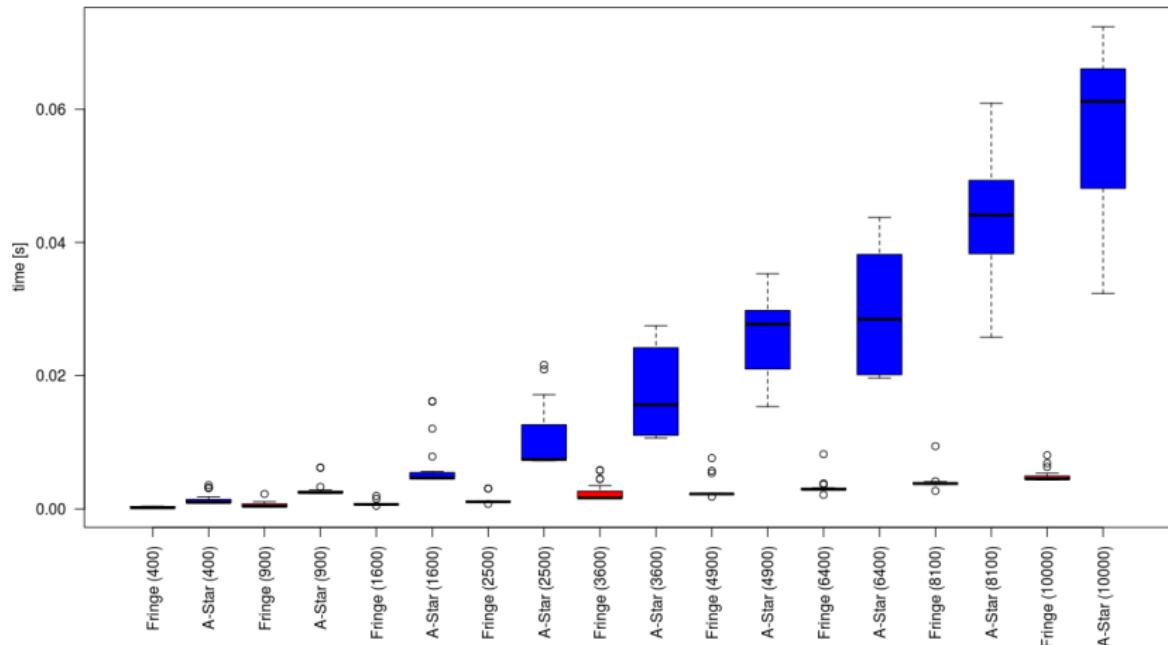


Some benchmark graphs...



Benchmark runtime

- Runtime vs. A* from Boost Graph Library
- Using "cross graph" and 400 - 10'000 nodes
- Threshold $\pm=1$



Benchmark path length

- Runtime vs. A* from Boost Graph Library
- Using "cross graph" and 400 - 10'000 nodes
- Threshold $\pm= 1$

# Nodes	A-Star	Fringe	Difference
400	69.731	70.6903	0.9593
900	101.071	102.638	1.567
1600	133.304	136.326	3.022
2500	165.47	167.891	2.421
3600	195.363	198.115	2.752
4900	227.957	231.554	3.597
6400	258.5	261.49	2.99
8100	288.961	293.483	4.522
10000	321.263	325.853	4.59

The End