

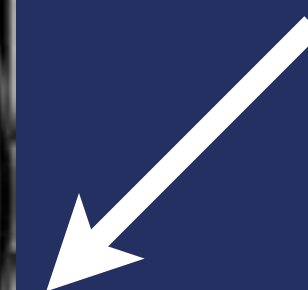
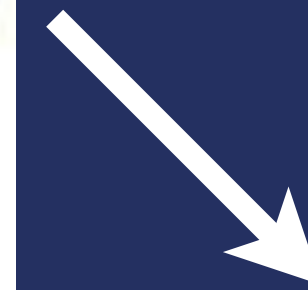


Losing Focus

Losing Focus

One of the common first steps for computer vision is to compute edges. Counter intuitively, we get better edges if the image is blurred before applying a gradient filter.

You have been provided code for a serial gaussian blur filter. Please improve the performance using parallelism and add the Prewitt gradient filters to the image processing.



Stencil Pattern

- **A combination of data reorganization and map patterns**
- **Really useful for large datasets and distributed computation**
- **Works on data in tiles**
- **Neighboring tile values are needed for future iterations**

Next Steps

Go to the shell and pull from the repository.

In each of the three technologies (OpenMP, TBB, Cilk) add parallelism to improve performance. Then use the Prewitt kernels to generate images highlighting the likely edges.



Solution Sketch

- **Add parallelism to the existing gaussian blur application**
- **Verify a performance improvement**
- **Use the Prewitt stencil kernels to produce the edge output**