

# 2018 Research Interest/Project Ideas

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## **SpatialFlare: Native Compilation for Spatial Queries**

In recent work, we have developed an accelerator back-end for Apache Spark that delivers 10x-100x speedups on SQL workloads, thanks to native code generation and architecture-aware optimizations (<https://arxiv.org/abs/1703.08219>). In this project, we plan to extend the technique to spatial queries and especially multi-dimensional index structures. The goal will be to reap similar benefits for spatial queries, which form the basis for global information systems (GIS).