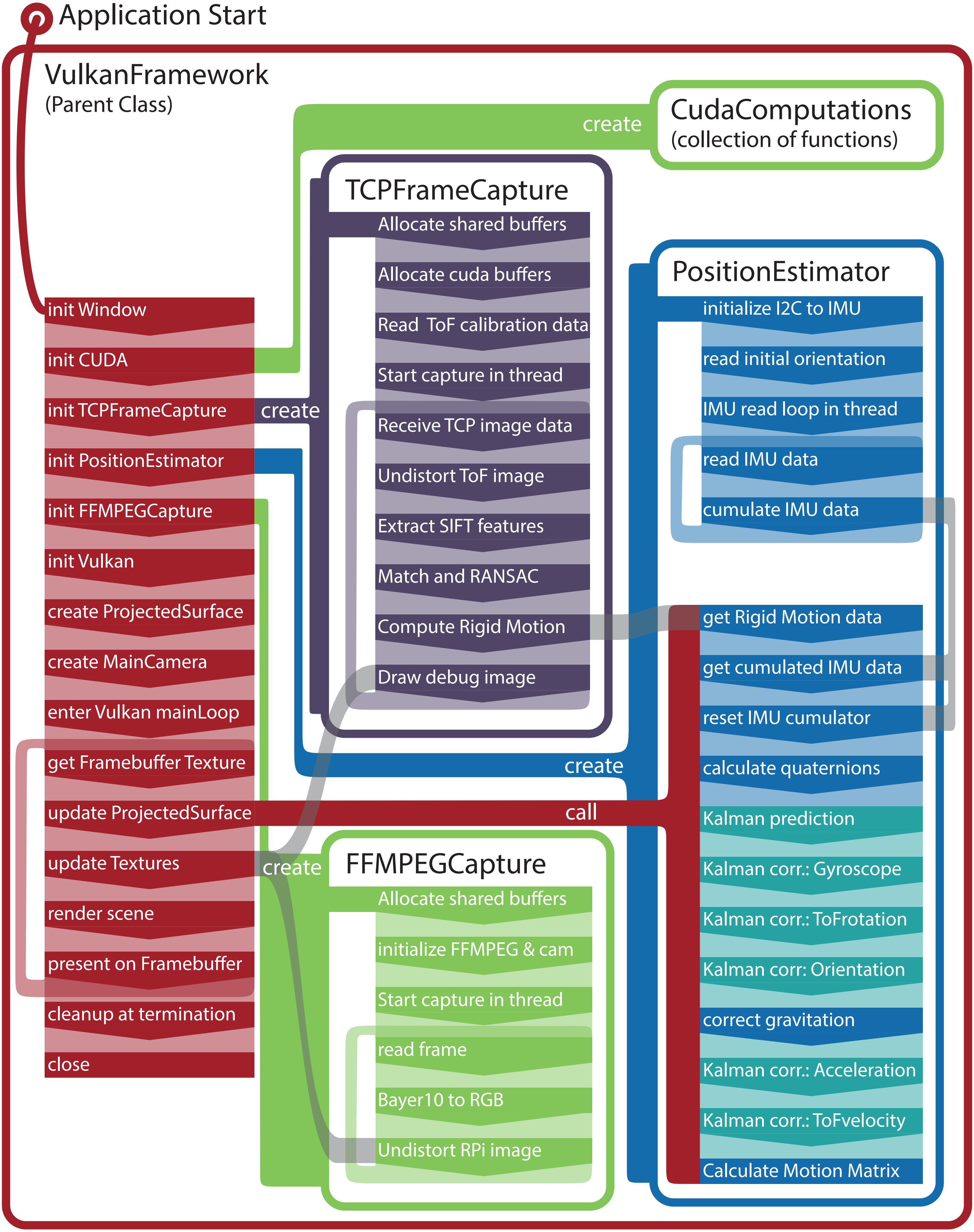
Application Start
VulkanFramework
(Parent Class)
init Window
init CUDA
init TCPFrameCapture
init PositionEstimator
init FFMPEGCapture
init Vulkan
create ProjectedSurface
create MainCamera
enter Vulkan mainLoop
get Framebuffer Texture
update ProjectedSurface
update Textures
render scene
present on Framebuffer
cleanup at termination
close
create
CudaComputations
(collection of functions)
create
TCPFrameCapture
Allocate shared buffers
Allocate cuda buffers
Read ToF calibration data
Start capture in thread
Receive TCP image data
Undistort ToF image
Extract SIFT features
Match and RANSAC
Compute Rigid Motion
Draw debug image
create
PositionEstimator
initialize I2C to IMU
read initial orientation
IMU read loop in thread
read IMU data
cumulate IMU data
get Rigid Motion data
get cumulated IMU data
reset IMU cumulator
calculate quaternions
Kalman prediction
Kalman corr.: Gyroscope
Kalman corr.: ToFrotation
Kalman corr: Orientation
correct gravitation
Kalman corr.: Acceleration
Kalman corr.: ToFvelocity
Calculate Motion Matrix
call
create
FFMPEGCapture
Allocate shared buffers
initialize FFMPEG & cam
Start capture in thread
read frame
Bayer10 to RGB
Undistort RPi image