Securing IoT Devices using Behavioral Profiles

Research Milestone proposal

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0.1 Motivation

In most computer vision and image analysis problems, it is necessary to define a similarity measure between two or more different objects or images. Template matching is a classic and fundamental method used to score similarities between objects using certain mathematical algorithms[1]. In this project, we'll propose two implementations of image template matching in CUDA. Our first method is based on the *naive* version of the template matching and the second method is based on the In most computer vision and image analysis problems, it is necessary to define a similarity measure between two or more different objects or images. Template matching is a classic and fundamental method used to score similarities between objects using certain mathematical algorithms[1]. In this project, we'll propose two implementations of image template matching in CUDA. Our first method is based on the naive version of the template matching and the second method is based on the In most computer vision and image analysis problems, it is necessary to define a similarity measure between two or more different objects or images. Template matching is a classic and fundamental method used to score similarities between objects using certain mathematical

0.2 Background and PriorWorks

0.3 Method

References

- [1] Hashemi, Nazanin Sadat, et al. "Template Matching Advances and Applications in Image Analysis." arXiv preprint arXiv:1610.07231 (2016).
- [2] Mahalakshmi, T., R. Muthaiah, and P. Swaminathan. "An overview of template matching technique in image processing." Research Journal of Applied Sciences, Engineering and Technology 4.24 (2012): 5469-5473.
- [3] Perveen, Nazil, Darshan Kumar, and Ishan Bhardwaj. "An overview on template matching methodologies and its applications." IJRCCT 2.10 (2013): 988-995.
- [4] Cox, Greg S. "Template matching and measures of match in image processing." University of Cape Town, South Africa (1995).
- [5] Andrey Alekseenko (https://stackoverflow.com/users/929437/aland), Amdahl's law and GPU, URL (version: 2018-07-13): https://stackoverflow.com/q/12398929.
- [6] Ofenbeck, Georg, et al. "Applying the roofline model." Performance Analysis of Systems and Software (ISPASS), 2014 IEEE International Symposium on. IEEE, 2014.
- [7] Techpowerup (2018, July 14). *NVIDIA GeForce GTX 850M* [Online]. Available: https://www.techpowerup.com/gpudb/2538/geforce-gtx-850m.
- [8] Gonzalez, Rafael C., and Richard E. Woods. "Image processing." Digital image processing 2 (2007).