3. 所需仪器设备

   硬件：个人笔记本电脑，CPU i5(2.2Ghz)，GPU GTX 825M, 内存4G

   软件：MATLAB2018A, Autodesk 3ds MAX 2016 English

4. 主要参考文献

   a) 数字摩尔3D测量原理

      i. Gorthi, S. S. and P. Rastogi (2010). "Fringe projection techniques: whither we are?" Optics and lasers in engineering 48(ARTICLE): 133-140.

      ii. Meadows, D., et al. (1970). "Generation of surface contours by moiré patterns." Applied Optics 9(4): 942-947.

      iii. Mohammadi, F. (2017). "3D optical metrology by digital moiré: Pixel-wise calibration refinement, grid removal, and temporal phase unwrapping."

      iv. Talebi, R., et al. (2013). 3-D reconstruction of objects using digital fringe projection: survey and experimental study. Proceedings of World Academy of Science, Engineering and Technology, World Academy of Science, Engineering and Technology (WASET).

      v. Zhou, C., et al. (2018). "Dynamic 3D shape measurement based on the phase-shifting moir\'e algorithm." arXiv preprint arXiv:1807.01399.

   b) 滤波消除噪声

      i. Coifman, R. R. and D. L. Donoho (1995). Translation-invariant de-noising. Wavelets and statistics, Springer: 125-150.

      ii. Mohammadi, F. and J. Kofman (2016). "Improved grid-noise removal in single-frame digital moiré 3D shape measurement." Optics and lasers in engineering 86: 143-155.

      iii. Münch, B., et al. (2009). "Stripe and ring artifact removal with combined wavelet—Fourier filtering." Optics express 17(10): 8567-8591.

      iv. Xie, J., et al. (2012). Image denoising and inpainting with deep neural networks. Advances in neural information processing systems.

   c) 相位展开

      i. Mohammadi, F. and J. Kofman (2019). "Multi-Wavelength Digital-Phase-Shifting Moiré Based on Moiré Wavelength." Applied Sciences 9(9): 1917.

指导教师评语：（建议填写内容：对学生提出的方案给出评语，明确是否同意开题，提出学生完成上述任务的建议、注意事项等）

开题报告符合毕业设计任务要求。进行了初步的文献调研，并给出具有一定可行性的设计方案。应保证有足够的时间投入。通过毕业论文工作培养自己自主学习和分析、解决问题的能力。同意开题。

指导教师签名：

2019年 3月 5日