

浮游动物分类实验分析

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1. 浮游生物数据集

<https://www.nodc.noaa.gov/General/plankton.html>

Imaging FlowCytobot (IFCB)

Video Plankton Recorder (VPR) 最初由 WHOI 设计。

1.1 浮游植物

1.1.1 已经分类

1. 论文 Automated taxonomic classification of phytoplankton sampled with imaging-in-flow cytometry 中用到的数据集: <http://aslo.org/lomethods/free/2007/0204a1.html> (采用的是 Imaging FlowCytobot (IFCB))。2004 和 2005 春天在 Woods Hole Harbor 采集的。(已经下载)

2. 伍兹霍尔海洋研究所 (Woods Hole Oceanographic Institution, WHOI) 采用 IFCB 收集的 Martha's Vineyard Coastal Observatory (MVCO) 从 2006 到 2014 年的图像数据: <https://darchive.mblwhoilibrary.org/handle/1912/7341>。(正在下载)

3. plankton net (Taxonomic database of images of plankton species, 维基百科上找到的): <http://planktonnet.awi.de> (还没有下载, 需要抓图下来)。

4. <http://www.cedareden.com/phyto.html> (已经分好类了, 需要抓图)

1.1.2 没有进行分类

1. Martha's Vineyard Coastal Observatory (MVCO) (采用的是 Imaging FlowCytobot (IFCB)): <http://ifcb-data.whoi.edu/mvco>。(未下载)

1.1.3 没有找到数据集

1. Scripps Plankton Camera (SPC): <http://spc.ucsd.edu/imagdata/spcview-plankton-camera-imag>

2. JODC Plankton Dataset: <http://ecologicaldata.org/wiki/jodc-plankton-dataset>

3. <http://life.bio.sunysb.edu/marinebio/plankton.html> (有例图, 但是没有找到数据集)

4. SAHFOS (Sir Alister Hardy Foundation for Ocean Science) http://www.sahfos.ac.uk/pil/plankton_image_database_homepage.htm (每一类的图片只有几张, 不知道联系能不能要到更多图片)

5. <http://www.imagequest3d.com/pictures/phytoplankton/> (只有很少的样图)

6. <http://www.fluidimaging.com/applications/aquatic-research/marine-science> (没有找到数据集下载的地方, 应该是有数据集的, 可以去要)

7. http://cs231n.stanford.edu/reports/sagarc14_final_report.pdf和<http://hmsc.oregonstate.edu/research-labs/planktonlab/outreach>、<http://hmsc.oregonstate.edu/image-album/plankton-images> (没有找到数据集, 可以去要)

1. NASA Healy Arctic cruise : <http://ifcb-data.whoi.edu/Healy1101>

2. Salt Pond: <http://ifcb-data.whoi.edu/saltpond>。

1.2 浮游动物

In the past three decades various optical technologies capable of imaging zooplankton have been developed, including bench-top type imaging systems such as ZooScan and FlowCAM as well as in situ systems such as the Video Plankton Recorder (VPR) , Underwater Vision Profiler (UVP), ZOOplankton VISualization system (ZOOVIS), the Lightframe On-sight Keyspecies Investigate System (LOKI), Shadow Image Particle Profiling Evaluation Recorder (SIPPER), and the In Situ Ichthyoplankton Imaging System (ISIIS).

1.2.1 已经分类好

1. Scientific Committee on Oceanic Research(SCOR) 是由 International Council for Science(ICSU) 组织的来处理各个学科之间的海洋科学问题。Scientific Committee on Oceanic Research (SCOR) created an international working group to evaluate the state of Automatic Visual Plankton Identification (<http://www.scor-wg130.net>)[1]。

数据集在 SCOR 的 Archive-ImageDataSet 中<http://www.scor-wg130.net/index.cfm?err=&CFID=21726107&CFTOKEN=fdcee774fe9206e5-C4B4A0EB-155D-0102-8481F9D3D8D047CF>。(已经下载)

2. ZOOSCAN: <http://www.zooscan.obs-vlfr.fr/> Training Sets 中有 training set、test set 和 learning set 等等。(已经下载)

3. kaggle plankton: <https://www.kaggle.com/c/datasciencebowl>, 训练集已经分类, 测试集没有分类。(已经下载)

4. ZooImage: <http://www.sciviews.org/zooimage/index.html> (需要下载)

1.2.2 没有进行分类

1.2.3 没有找到数据集

1. <https://www.nodc.noaa.gov/General/plankton.html>. Customized plankton datasets can also be obtained by contacting NODC User Services. <https://www.nodc.noaa.gov/about/contact.html> (是不是需要从这里联系去要数据)

2. The data described in this paper will shortly be made available through the CalCOFI DataZoo Website: <http://oceaninformatics.ucsd.edu/datazoo/>

1.2.4 似乎是只是介绍不同种类的浮游生物

1. MARINEBIO (似乎只是简单地介绍) : <http://marinebio.org/oceans/zooplankton/>

2. Coastal & Oceanic Plankton Ecology, Production & Observation Database (COPEPOD) is an on-line database of plankton abundance, biomass, and composition data compiled from a global assortment of cruises, projects, and institutional holdings. (好像没有图像数据)

3. SCRIPPS INSTITUTION OF OCEANOGRAPHY—Zooplankton of the San Diego Region: <https://scripps.ucsd.edu/zooplanktonguide/>。浮游动物的种类分的很细，分别进行了介绍，有的种类下面都有一段小视频，可以从视频里截图（但是视频中的目标个数也不太多）。

1. Zooplankton of the San Diego Region 圣迭戈（美国加利福尼亚州的一个太平洋沿岸城市）的浮游动物: <https://scripps.ucsd.edu/zooplanktonguide/>。

2. Coastal & Oceanic Plankton Ecology, Production & Observation Database (COPEPOD): <http://www.st.nmfs.noaa.gov/copepod/>。

3. Plankton Web: <http://www.sfrc.ufl.edu/planktonweb/index.htm>。

参考文献

- [1] Gaby Gorsky, Mark D Ohman, Marc Picheral, Stéphane Gasparini, Lars Stemmann, Jean-Baptiste Romagnan, Alison Cawood, Stéphane Pesant, Carmen García-Comas, and Franck Prejger. Digital zooplankton image analysis using the zooscan integrated system. *Journal of Plankton Research*, 32(3):285–303, 2010.