

# DevoLearn:

a platform for open Developmental Data Science, Machine Learning,  
and Education

Developing the nematode (*C. elegans*) and other creatures  
using simulation, analysis, and  
theory-building

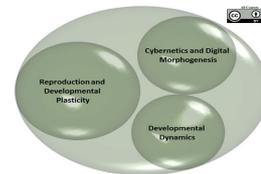


Building the World's First Digital  
*C. elegans* (Open-source)



<http://openworm.org>

NEW! Building the NeuroCommons  
doi:10.1007/s12021-020-09508-1



Bradly Alicea, Mayukh Deb, Ujjwal  
Singh, and the DevoWorm group

[devoworm.weebly.com](http://devoworm.weebly.com)  
[www.github.com/devoworm](https://www.github.com/devoworm)  
[www.github.com/devolearn](https://www.github.com/devolearn)



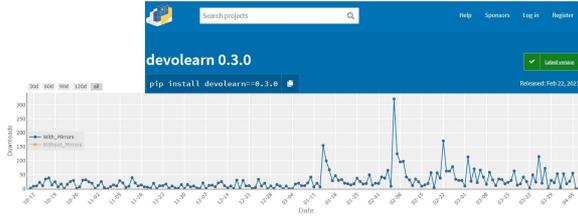
Segmented microscopy data, public repositories,  
literature mining.

Openly-available Primary,  
Secondary, and Tertiary Datasets  
[devoworm.github.io/devozoo/index.html](https://devoworm.github.io/devozoo/index.html)



[github.com/devolearn](https://github.com/devolearn)

# DevoLearn



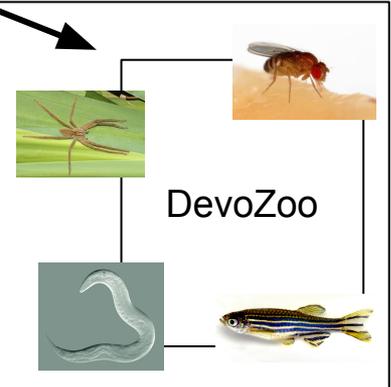
DevoLearn  
0.3.0

[pypi.org/project/devolearn/](https://pypi.org/project/devolearn/)

Species-specific  
Models  
(DevoWormAI)



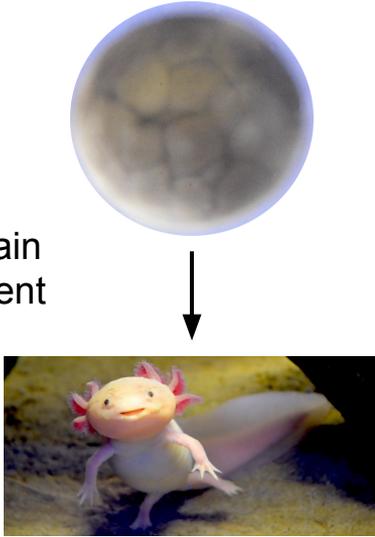
[devoworm.github.io/devowormai/index.html](https://devoworm.github.io/devowormai/index.html)



DevoZoo

# Deep Learning and Quantitative Morphology

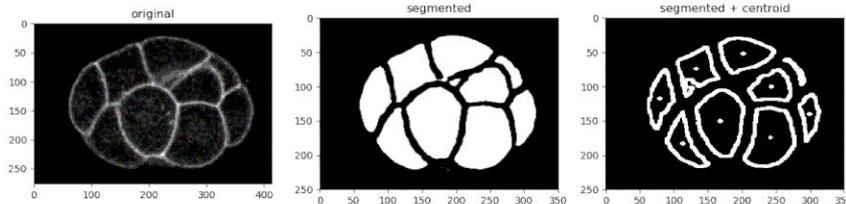
*Axolotl* brain development



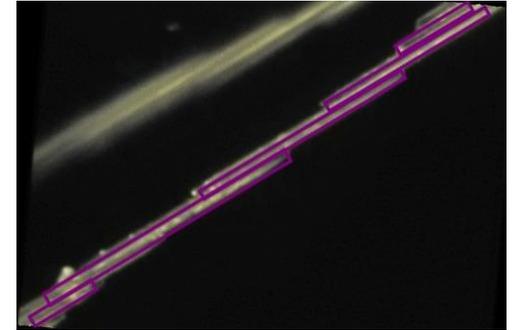
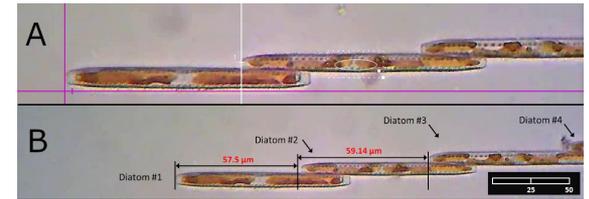
Theory-building to explain developmental processes



*C. elegans* embryogenesis



*Bacillaria* cell colony morphology

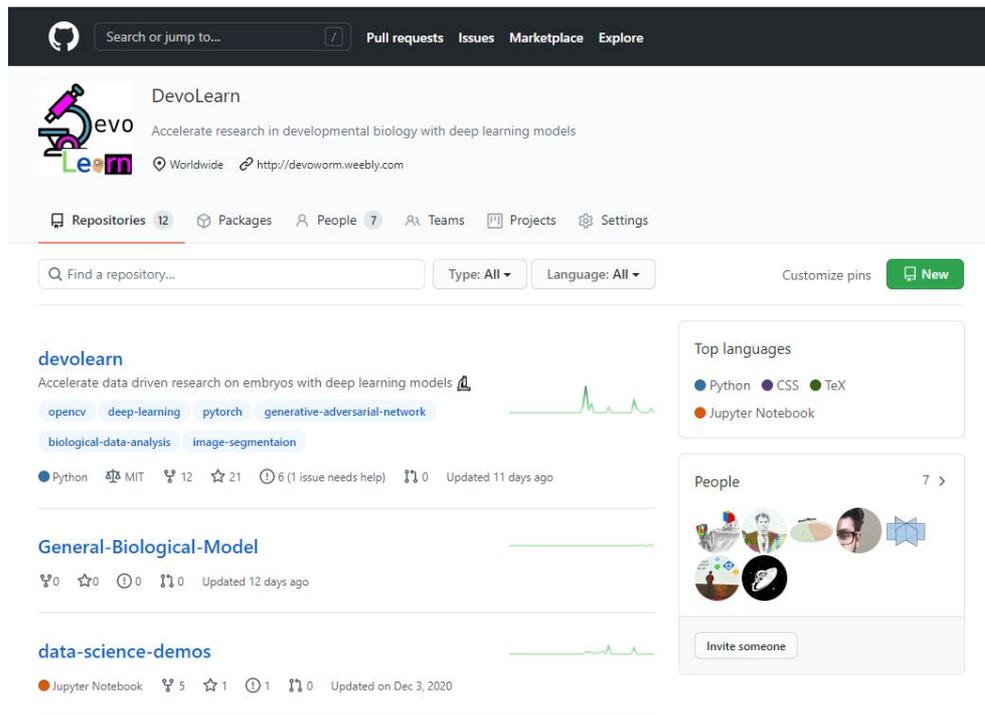


# Preparation for Google Summer of Code application period: education and evaluation

Find Call for Involvement

Contribute to a Github Issue During Application Period

Join weekly meetings, get involved in bigger projects



The screenshot shows the GitHub repository page for 'Devoworm'. The repository is titled 'Devoworm' and has a description: 'Accelerate research in developmental biology with deep learning models'. It is located in the 'Worldwide' region and has a website link 'http://devoworm.weebly.com'. The repository has 12 repositories, 7 people, and 7 teams. The page shows a search bar for repositories, filters for 'Type: All' and 'Language: All', and a 'New' button. The repository content includes a README with tags for 'opencv', 'deep-learning', 'pytorch', 'generative-adversarial-network', 'biological-data-analysis', and 'image-segmentation'. It also shows a list of issues, with the first issue titled 'General-Biological-Model' and the second 'data-science-demos'.



DevoLearn

Accelerate research in developmental biology with deep learning models

Worldwide <http://devoworm.weebly.com>

**Mayukh Deb**

DevoLearn developer, maintainer

**Ujjwal Singh**

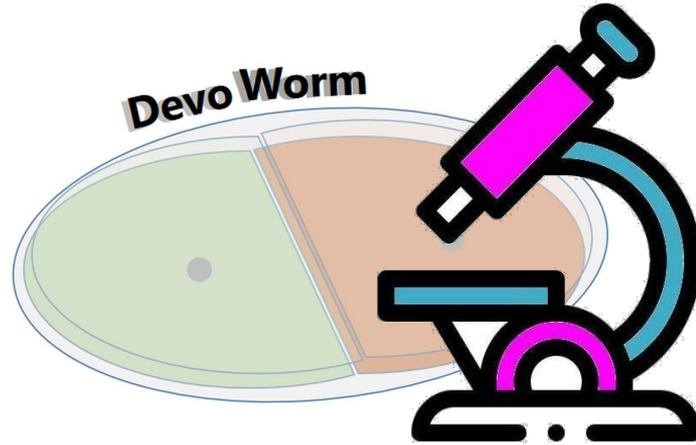
DevoWorm AI and DevoZoo developer

Repositories 12 Packages People 7 Teams Projects Settings

Being developed by contributors and the main group

- Data science demos: Jupyter notebooks and methodological tutorials.
- Education: teach computational students about developmental biology, and vice versa. Epistemological Directories (EDs) for lifelong learners.
- Theory-building: build explanatory frameworks and hypothesis generation for data generated through methods.

# Thank You!



Contact: [balicea@openworm.org](mailto:balicea@openworm.org)  
Join our Slack (#devoworm, #devolearn)!  
<https://launchpass.com/openworm>