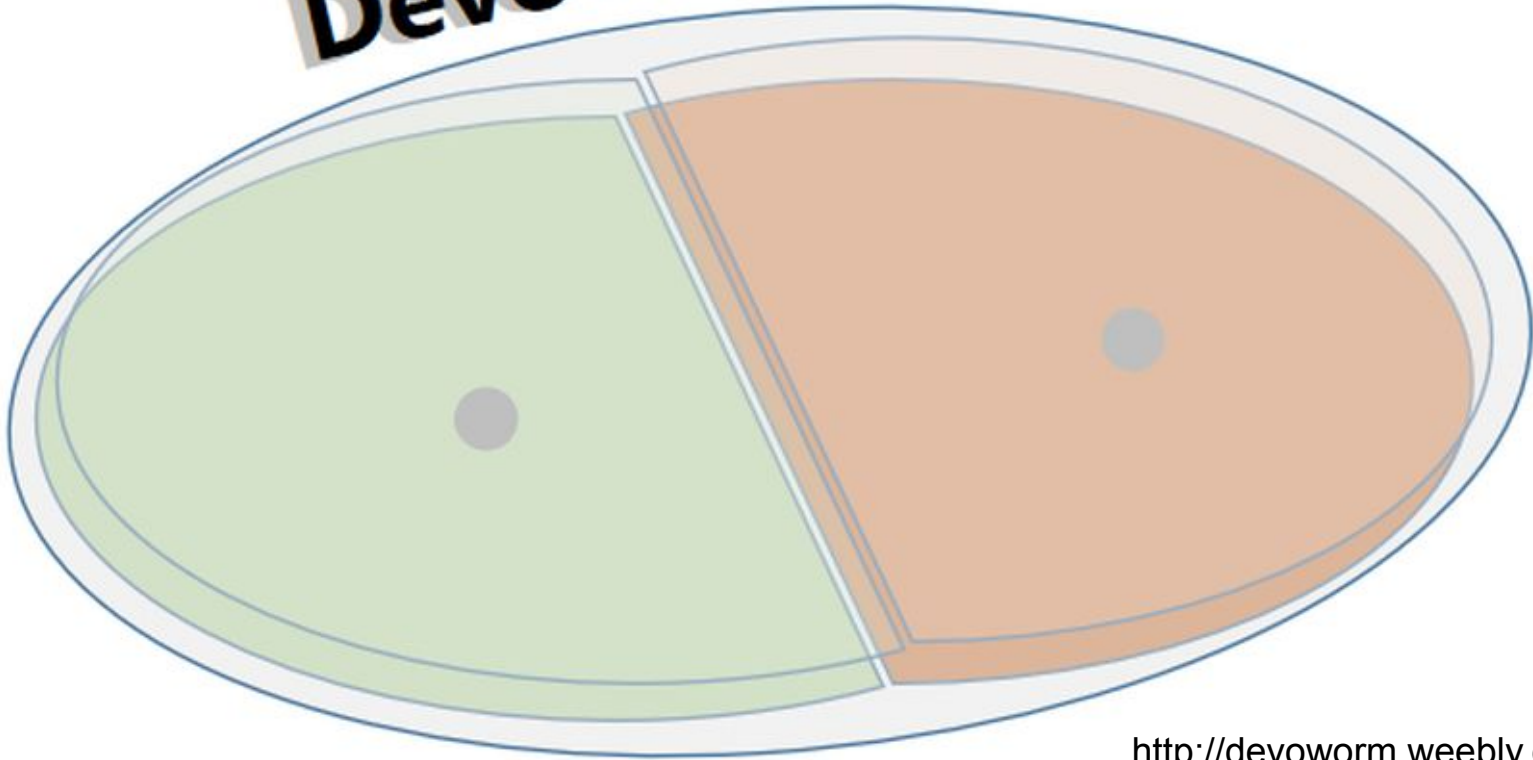


Devo Worm

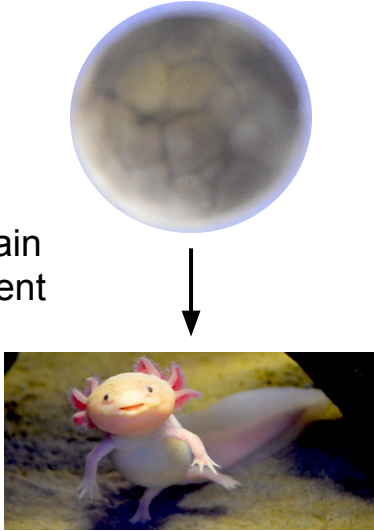
2021 Update
OpenWorm Foundation



<http://devoworm.weebly.com>
<http://www.github.com/devoworm>

Deep Learning and Quantitative Morphology

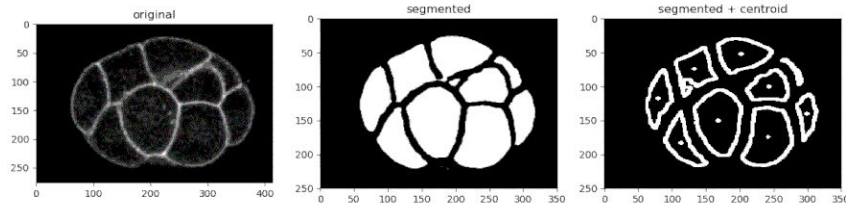
Axolotl brain development



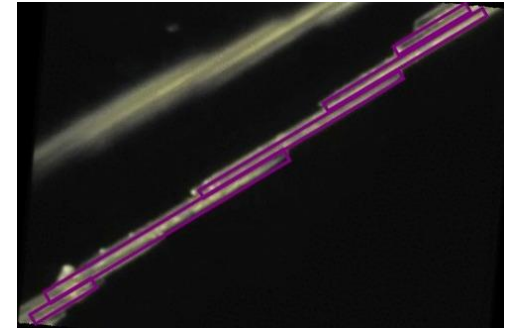
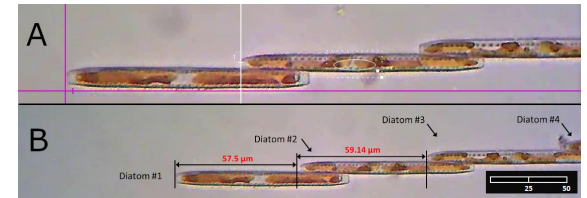
Theory-building to explain developmental processes



C. elegans embryogenesis



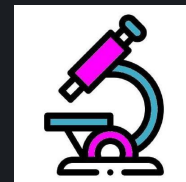
Bacillaria cell colony morphology





Mainak Deb 8:15 AM

DevoLearn just hit 10k downloads via PyPI 🚀
with over 800 downloads in the last 30 days.



Check out the stats here - <https://pepy.tech/project/devolearn>

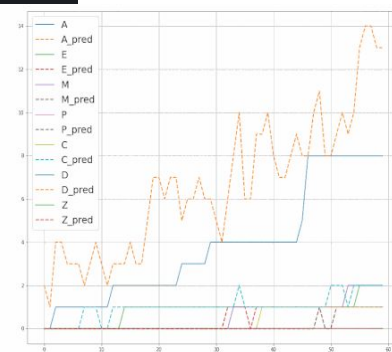
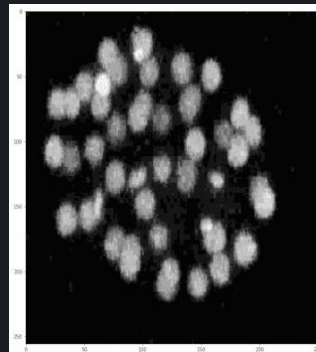
cc: @balicea @Ujjwal Singh @Mayukh @krishna katyal @Shruti @iammarco11 (edited)

Screenshot from 2021-08-19 18-43-51.png ▼

devolearn

Summary

| | |
|---------------------------|---|
| PyPI link | https://pypi.org/project/devolearn |
| Total downloads | 10,149 |
| Total downloads - 30 days | 826 |
| Total downloads - 7 days | 116 |



www.github.com/devolearn

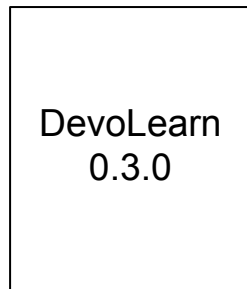


2020 and 2021 Seasons

Google Summer of Code

DevoLearn

<http://www.github.com/devolearn>



Github and
PyPi

Species-specific
Models
(DevoWormAI)

(Herokuapps)

DevoZoo

<http://devoworm.github.io>

Conference Presentations



DevoLearn: engaging learners with Computational Developmental Biology



International
C. elegans Conference

The OpenWorm Project: progress update, available resources and future plans



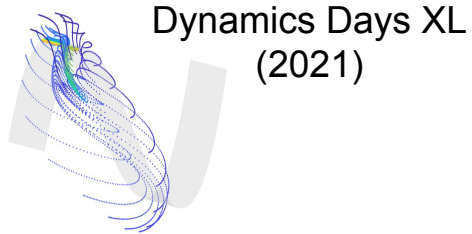
The Psychophysics of Non-neuronal Cognition

Contrast Between Biological and Artificial Neural Networks (BNNs vs ANNs)

Conference Presentations

NETWORKS
2021

Embryo Networks as Generative Divergent
Integration



Dynamics Days XL
(2021)

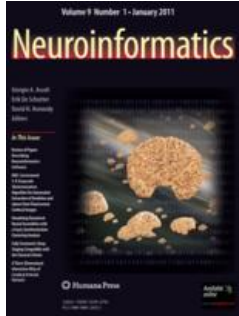
Game Theory of Developmental Processes

Advanced Computational
Neuroscience Network (ACNN)



Generative Divergent Integration as a Theory of the
Emergent Connectome

Papers Published



Building the NeuroCommons

Alicea, B., Gordon, R., and Portegys, T.E. **Data-theoretical Synthesis of the Early Developmental Process.** *Neuroinformatics*, doi:10.1007/s12021-020-09508-1.



Alicea, B., Parent, J., and Singh, U. **Periodicity in the Embryo: emergence of order in space, diffusion of order in time.** *Biosystems*, 104405.

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

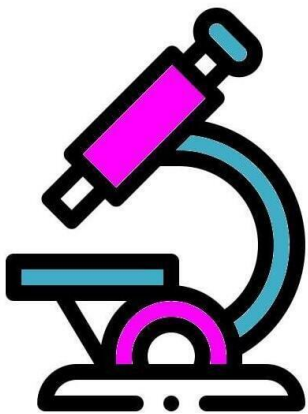
Find Call for Involvement

Contribute to a Github Issue During Application Period

Join weekly meetings, get involved in bigger projects

The image displays a screenshot of the DevOps Learning GitHub repository, specifically the 'Issues' tab. The repository is titled 'DevoLearn / devolearn' and is public. The issues list shows several open issues, including 'Try to integrate streamlit', 'CI: move to pytest+codecov', 'devolearn: long term vision', 'tests: unit tests do not check the outputs of models', and 'Enhancement: Allow prediction on numpy arrays present as local variable'. Each issue includes a title, a description, the author, the date it was opened, and the number of comments. Below the issues list, there is a video call interface showing three participants: a man in a blue shirt, a woman with glasses in a green shirt, and a man in a green shirt. The video call interface includes a search bar, a list of participants, and a chat area.

Open-source Contributors

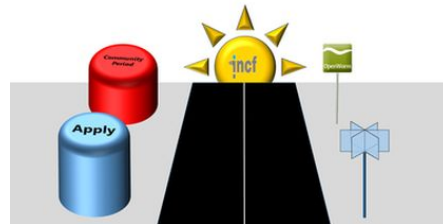


DevoLearn Launch
(September 2020)



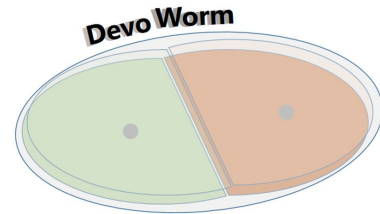
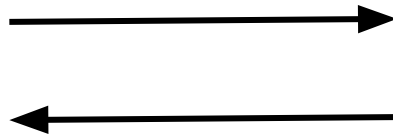
Github ID: Abtaha
Github ID: Jainal09
Github ID: RaviKarri
Github ID: RudRajit1729
Github ID: Joel-Hanson
Github ID: shreyraj2002
Github ID: Malvi-M
Github ID: RudRajit1729
Github ID: s0mnaths
Github ID: aswarth123
Github ID: vrutikrabadia
Github ID: iammarco11
Github ID: js899
Github ID: kingjuno

Maria Isabel Dias de Oliveira
Github ID: ujjwalll
Github ID: krishnakatyayal
Github ID: Mainakdeb
Github ID: Mayukhdeb
Github ID: jesparent
Github ID: Athene-AI
Github ID: rtharungowda



Cross-disciplinary Pathways

Orthogonal Research and
Education Laboratory



Broader set of opportunities in Neuro-AI,
ethics, and computational modeling

Computational Developmental
Biology

Thanks to our Contributors during 2020-2021!

Bradly Alicea
Richard Gordon
Susan Crawford-Young
Tom Portegys
Jesse Parent
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C V Aswartha Narayana

Thomas Harbich
Shruti Raj Vansh Singh
Krishna Katyal
Mainak Deb
Assaf Wodeslavsky
R Tharun Gowda
Yash Vadi
Abhishek Tiwari
Zura Isakadze

Google Summer of Code 2020

Mayukh Deb
Ujjwal Singh

Google Summer of Code 2019

Mainak Deb

OpenWorm Turns 10!

24 Jan 2011: Giovanni discovers **CyberElegans**, developed by **Andrey Palyanov** and **Sergey Khayrulin** (from AP Ershov Institute of Informatics, Russia) who are contacted and immediately agree to join forces with the OpenWorm team:



4 September 2011: [Article](#): Managing Complexity in Multi-Algorithm, Multi-Scale Biological Simulations: An Integrated Software Engineering and Neuroinformatics Approach.

September 2011: [OpenWorm Release 1](#)

December 2011: [OpenWorm's Blog is initiated](#)

April 2012: [OpenWorm Release 2](#)

August 2012: [Article](#): Towards a virtual *C. elegans*: A framework for simulation and visualization of the neuromuscular system in a 3D physical environment.

November 2012: [OpenWorm Release 3](#)

21 March 2013: [OpenWorm Journal Club with John White](#), the "father of the connectome".

July 2013:

- [First OpenWorm Conference](#), in Paris.

Call for OpenWorm/Biological Modeling Satellite Session

