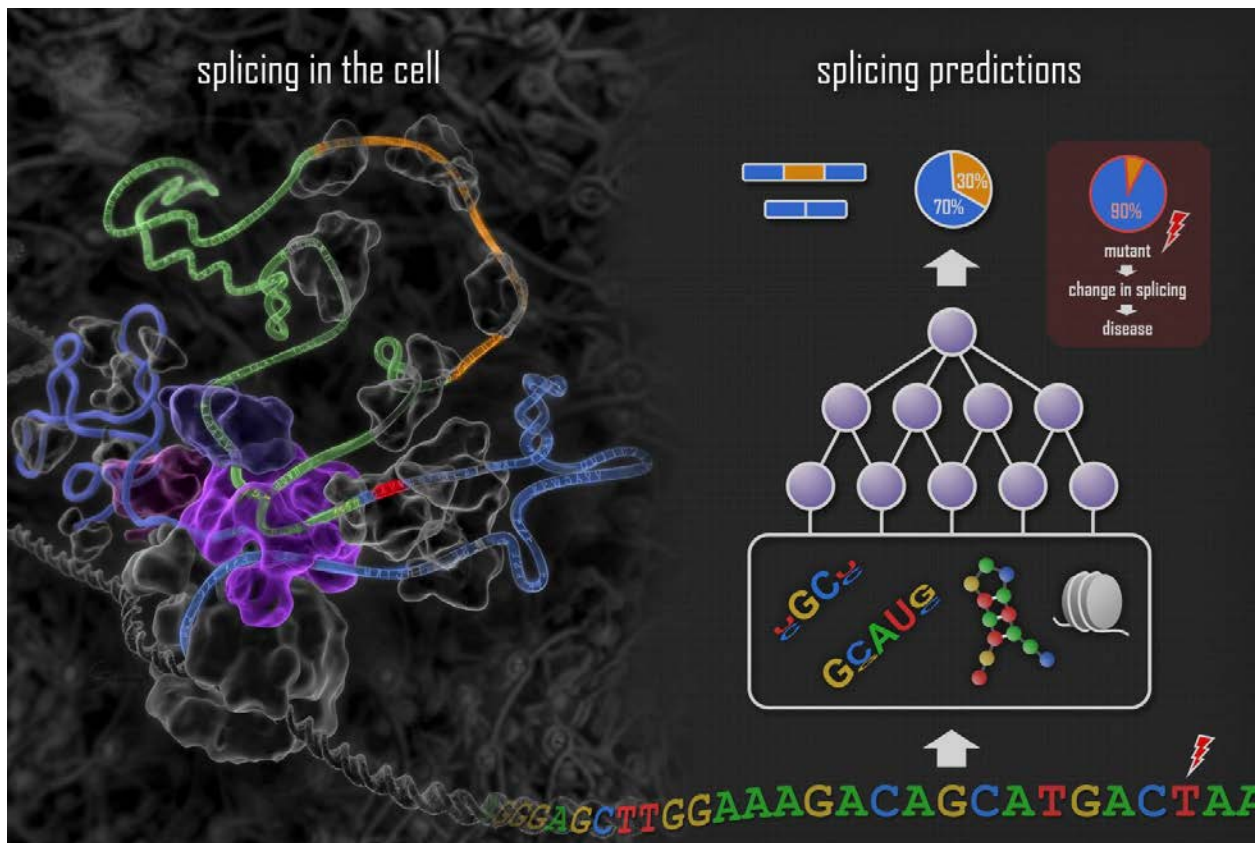


deepkapha.ai and Novo Nordisk Foundation Center for Protein Research and Stem Cell Biology, Copenhagen University

Wolgastraat 74
Assen, 9406RX
Nederland
Tel: +31592350707

Bioinformatics Deep Learning Workshop



GOALS OF THE WORKSHOP

1. **Acquire Elementary Deep Learning Skills** by the end of the workshop for proficiency:: To get the learners beyond the regular coding and then gradually get them introduced to more specifically into the deep learning techniques pertaining to bioinformatics.
2. **Gain understanding of advanced techniques in Bioinformatics:** What advanced techniques are used in Medical industry and what else is trending.

ROUGH OUTLINE OF THE WORKSHOP

Day 1 -- Getting started:: 31st May 2018

10:00 – 10:45: Arrival, meeting with Gopal, Managers at CPR and DanStem

Objective: Discussion with Gopal on various projects and possibility of using advanced ML techniques in existing projects.

11:00 – 12:00: Seminar (Artificial Intelligence: application in life and health sciences)

Victor Haderup Auditorium.

Lunch Break

14:00 - 16:00: Deep Learning Workshop: Getting started

Greenhouse seminar room 6.2.09

***** If you do not have access to this room, I will be standing outside the door at 13.50 hrs to escort you.**

Objective:

Here the learners get accustomed to the most essential machine – and deep learning scientific libraries. This is a non-coding section and gives learners the opportunity to both engage with Dhr. Tarry Singh in both theory as well as practical applications of Deep Learning in Bioinformatics (even in areas of protein research).

This also allows the opportunity to network and exchange research ideas. Meeting (ad-hoc)

Day 2 -- Digging deeper:: Coding workshop : 1st June

Greenhouse seminar room 6.2.09

10:00 - 16:00: Code along with Tarry!

Here the learners get to learn the basics of:

1. Machine Learning (such as Linear Regression, Logistics Regression, K-Nearest Neighbors, SVM, Clustering, Decision Trees and Random Forests and more.) *as well as*
2. Deep Learning and its popular NN architectures such as CNN (U-Net and more) and RNN (specifically in Genomics, Protein Research).

Also time permitting various techniques of data preprocessing such as augmentation/expansion etc can be revisited.

NOTE: This typically takes a day for a rapid crash course so let's see how far we get there to give learners optimal experience given just a few hours of this introductory session.

Day 3 – One2One meeting with Gopal

10:00-13:00: General discussion about projects at the centers

14:00-15:00: Departure to the Airport.

Requirement:

All participants are requested to bring their laptop with internet connection (EUDOROAM is available). Do not forget to bring your charging adapter.

Course References:

<https://github.com/TarrySingh/Deep-Learning-Papers-Reading-Roadmap>

<https://github.com/TarrySingh/Deep-Neural-Networks-HealthCare>



Tarry Singh
Founder & AI Researcher

+31 6 18364277
tarry.singh@deepkapha.ai
www.deepkapha.ai