

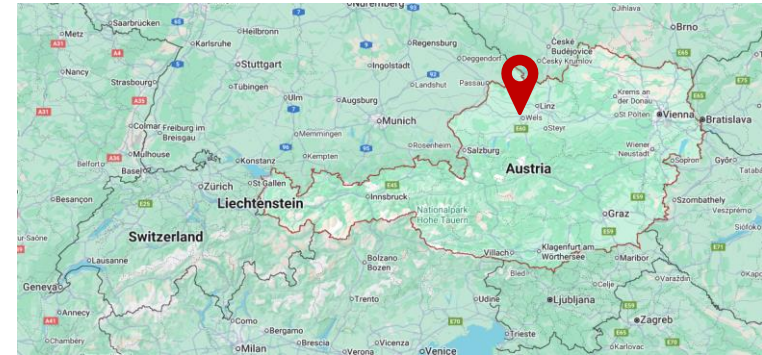
Self Introduction Lukas Breitwieser

SFT Group Meeting
December 2, 2024



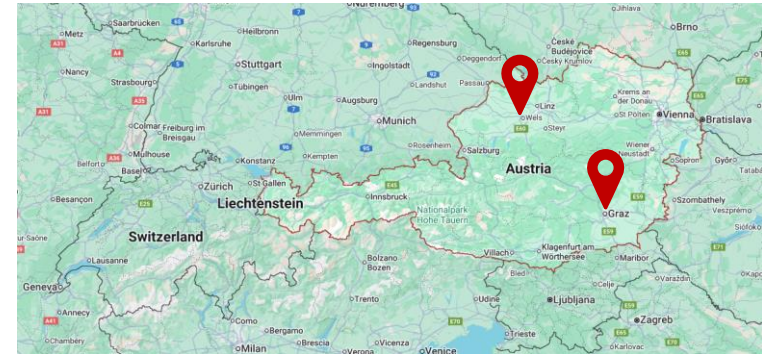
About Me

- I am from Austria



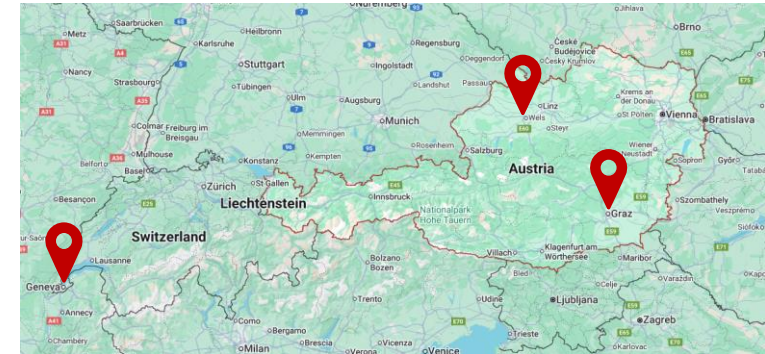
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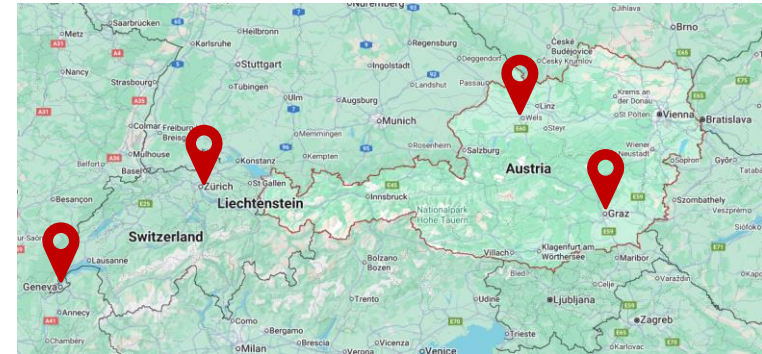
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- Joined **CERN openlab** (IT) as a summer student in 2015
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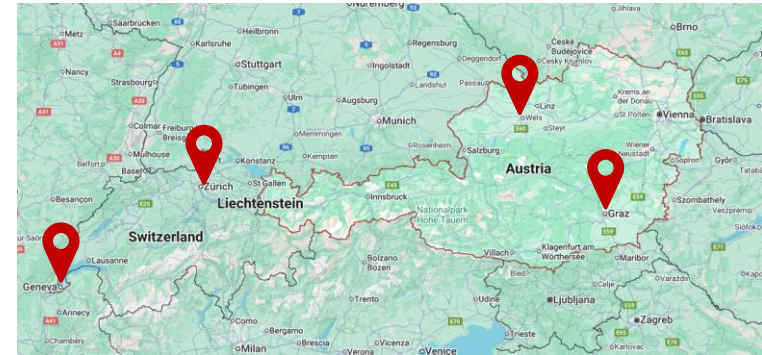
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 - Parallel, distributed, high-performance, and heterogeneous computing; computational biology/X



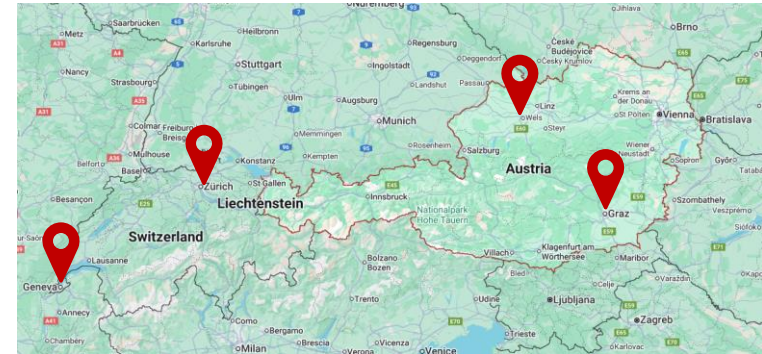
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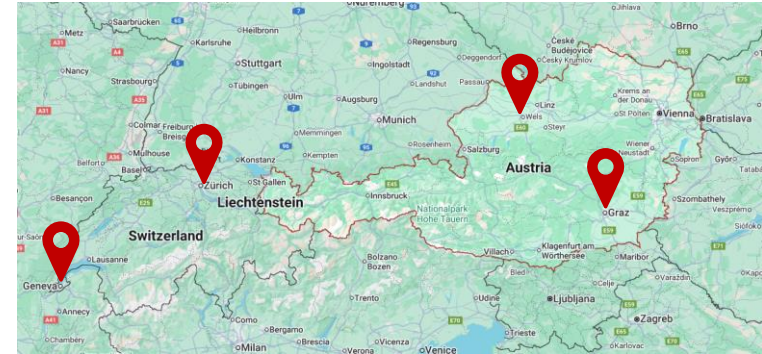
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- **Hobbies**
 - Road biking, running, swimming, skiing, hiking, and would like to try wing foiling



BioDynaMo in a Nutshell

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We address two key issues of agent-based modeling

- inflexible software design
- low performance

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- 1 thereby enabling
 - larger and more complex simulations
 - faster iterative development
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 - faster iterative development
 - more extensive parameter exploration

- 2 significantly improving adoption

BioDynaMo Results

References: <https://doi.org/10.1145/3572848.3577480>, <https://doi.org/10.1093/bioinformatics/btab649>,
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BioDynaMo Results



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BioDynaMo Results



**500 billion
agents**

on **84096** CPU cores

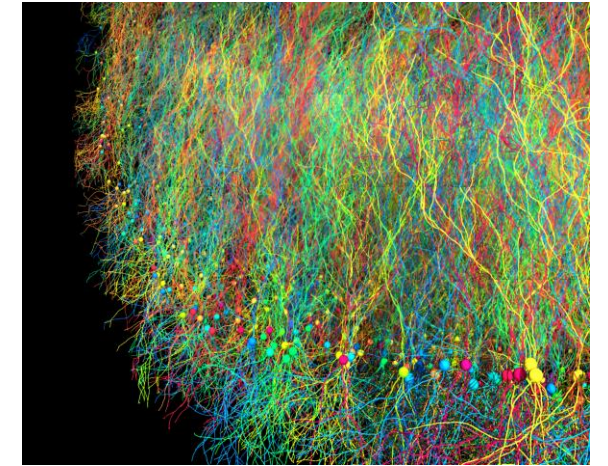
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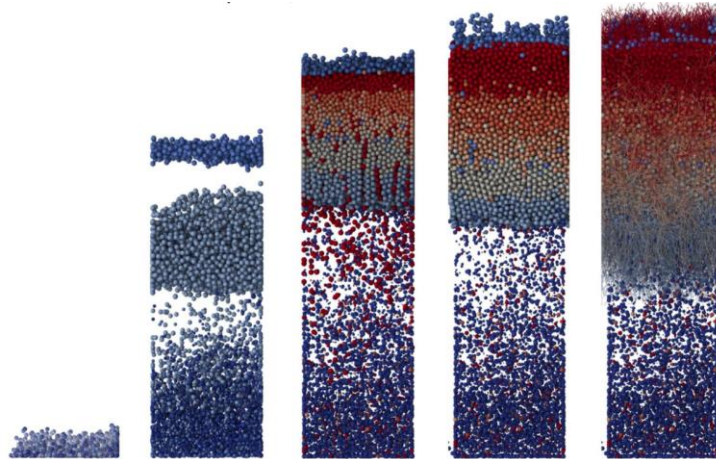
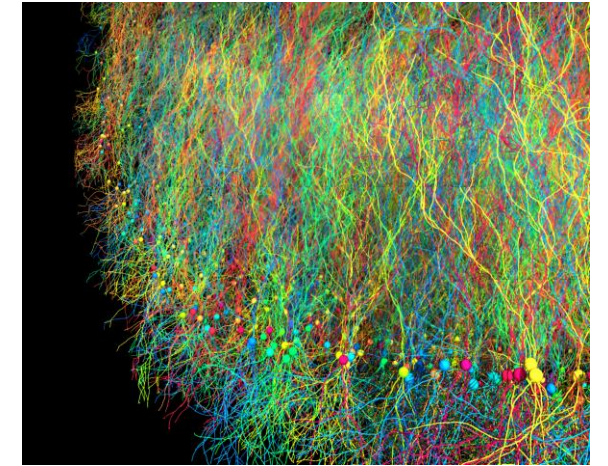


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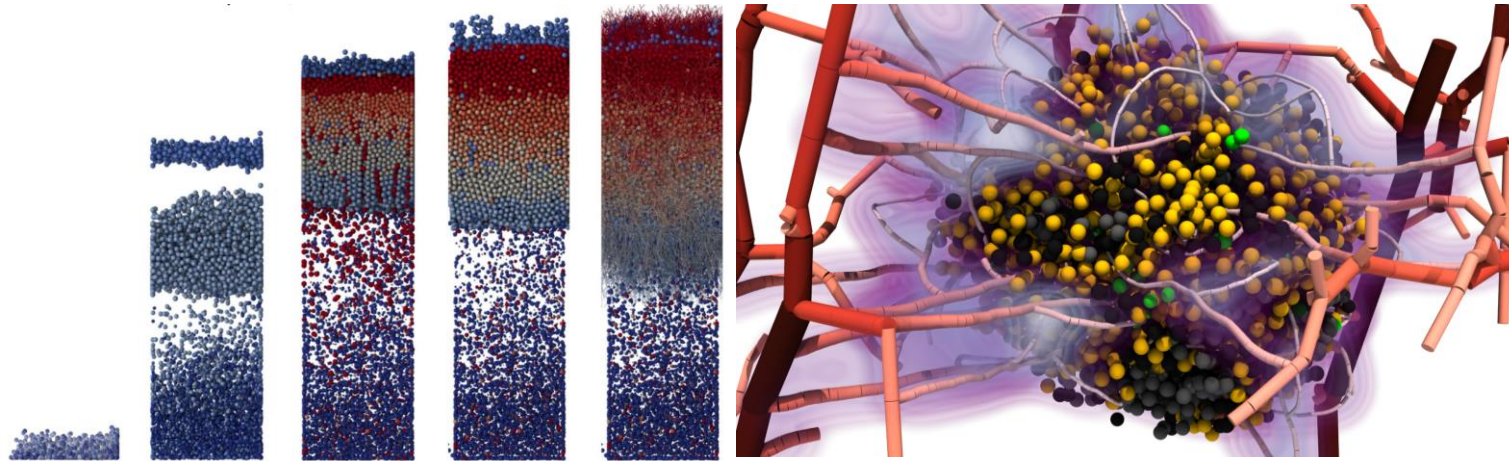
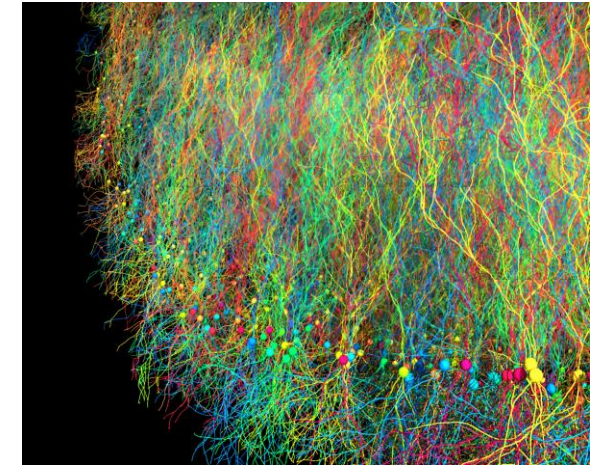
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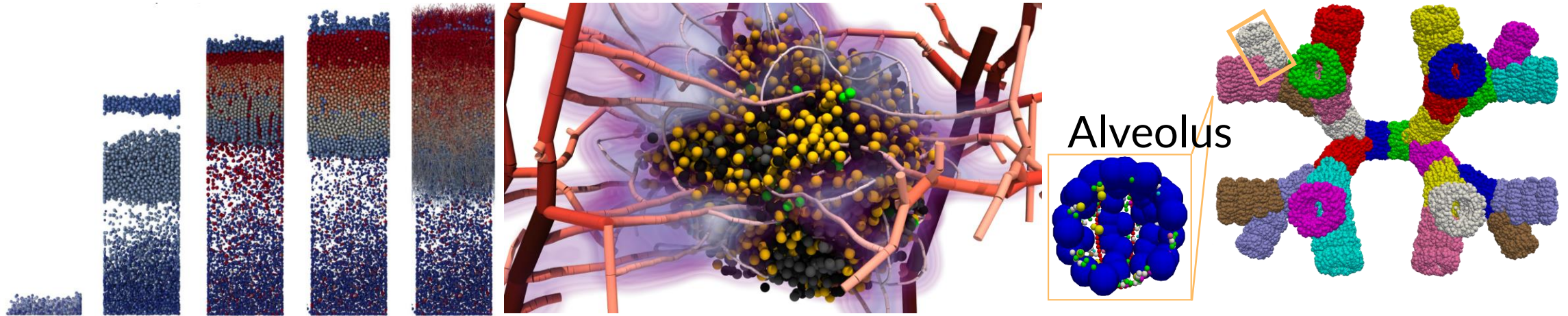
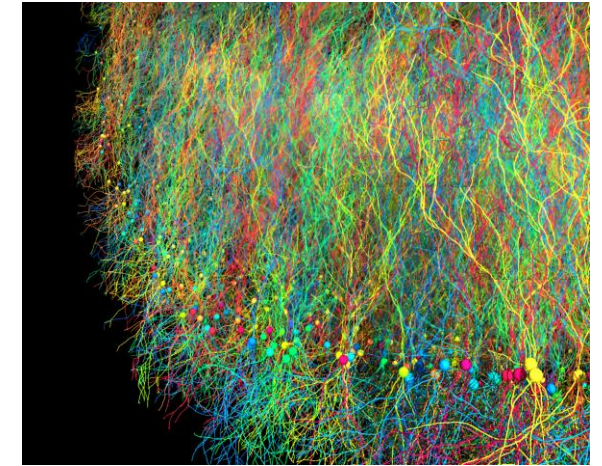
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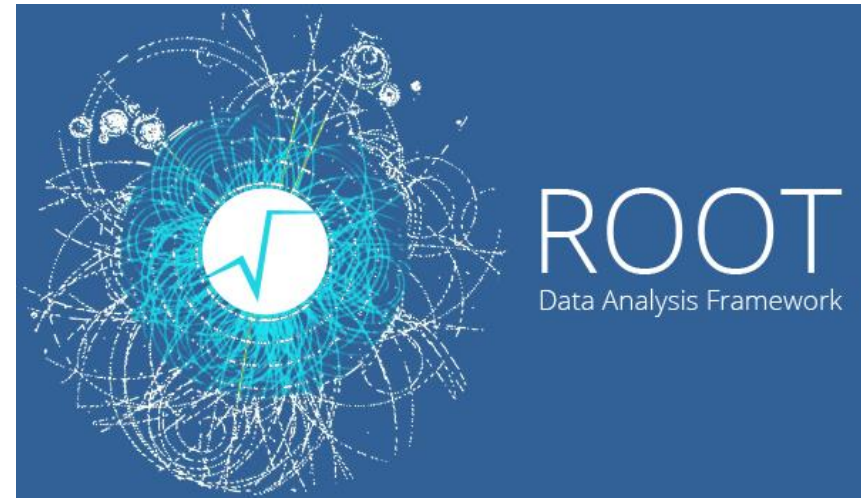
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My Future Contributions in SFT

- Contract: 2 year Quest
- Supervisor: Jonas Rembser

Tasks:

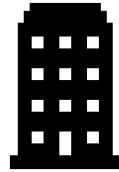
- EP R&D: GPU Histogramming
- Enabling CUDA support for ROOT's cling version
- Universal Histogram Interface
- ...



Thank You and Let's Connect ...



Lukas.Breitwieser@cern.ch



32/RC-13

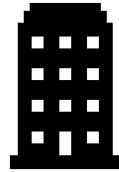


<https://linkedin.com/in/LukasBreitwieser>

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32/RC-13



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... and go for an early lunch together

