

Post-doc position in Machine Learning for Genomics
Gagneur lab, Computational Biology, Technical University of Munich

A 2-year post-doc position is available in the Computational Biology group of the Technical University of Munich (Prof. Julien Gagneur) starting as soon as possible.

Your role

The chair of Computational Molecular Medicine led by Julien Gagneur (TUM / HMGU) is looking for a talented postdoc to join his team. Your research topics include: expressive and effective mathematical representations of RNA or protein encoded regulatory sequences, notably using deep learning approaches (e.g. [1,2], Fig.1); development of integrative models of individual steps of gene expression (transcription, splicing, RNA degradation, translation and protein degradation); development of methodologies for interpretability of deep learning models, and for their application to the prediction of causal effects of genetic variants in genetic diseases (e.g. [3]) or cancer. We expect applications on large-scale public data as well as on unpublished datasets from experimental collaborators in biology (e.g. [4]) or medicine (e.g. [5]).

You are

Applicants must either hold a PhD in computational biology or bioinformatics, or hold a PhD in physics, statistics, or applied mathematics with practical experience with deep learning methods and application to real world high-dimensional data. The candidate must have a proven publication record, interest for translational research, and have demonstrated the ability to work independently and creatively. (S)he should have excellent communications skills and be able to articulate clearly the scientific and technical needs, set clear goals and work within an interdisciplinary setting.

We are

The Gagneur lab is a lively, international, and interdisciplinary computational biology group with a research focus on the genetic basis of gene regulation and its implication in diseases. We are part of the Department of Computer Science, as well as the faculty of medicine of the Technical University of Munich, one of the top ranked European universities. We also have a scientific team which is part of the Institute of Computational Biology of the Helmholtz Center Munich. Our lab has strong links to other local scientists and institutions in biology and medicine. Munich offers an outstanding, dynamic, interactive and internationally oriented research environment. Munich, the 2018 “most livable city in the world” according to the urban magazine Monocle, and the proximity of the Alps provide an excellent quality of life.

Apply

The position is funded for three years with a salary according to the TV-L (German academic salary scale).

Applications including a cover letter, CV, and references must be sent to jobs-gagneurlab@in.tum.de until Nov 30th 2021 referring to “Postdoc-HMGU-2021” in the title.

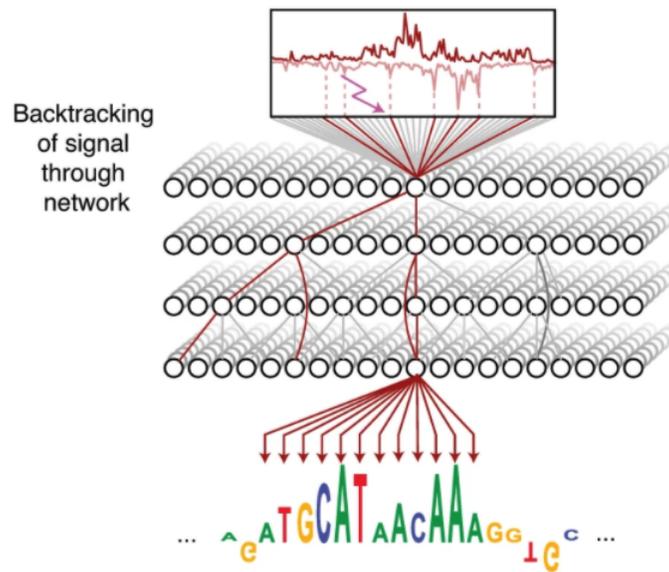


Figure 1. Interpretation of the end-end-model BPNet [1].

More

<https://www.gagneurlab.in.tum.de>

<https://kipoi.org>

References

1. Avsec et al., Base-resolution models of transcription factor binding reveal soft motif syntax. *Nature Genetics*, 2021
2. Avsec et al., Kipoi: accelerating the community exchange and reuse of predictive models for genomics, *Nature biotech*, 2019
3. Cheng et al., Modular modeling improves the predictions of genetic variant effects on splicing, *Genome Biology*, 2019 – winner model of the CAGI 2018 splicing challenge
4. Schwalb et al., TT-seq maps the human transient transcriptome, *Science*, 2016
5. Kremer et al., Genetic diagnosis of Mendelian disorders via RNA sequencing, *Nature communs*, 2017