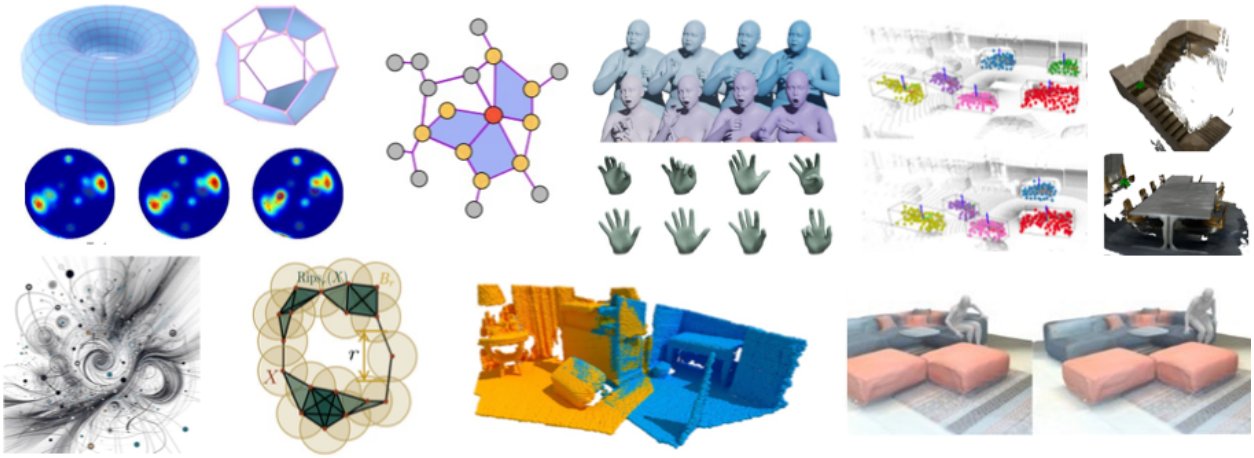
IMPERIAL

Prof. Tolga Birdal
UKRI Future Leaders Fellow
Department of Computing

PostDoc Positions in Topological Deep Learning

The CIRCLE group at Imperial is seeking highly motivated and talented Postdoctoral Research Associates (PDRAs / PostDocs), who have demonstrated competence in conducting cutting-edge research. The positions are fully funded in the context of Prof. Birdal's UKRI Future Leaders Fellowship, and focus on the design, development, and application of topological and geometric machine learning techniques, with a view to solving complex problems in areas ranging from 3D generative models to modelling proteins and molecules. Successful candidates will be involved in projects exploring novel ways to incorporate topological structures into deep learning pipelines, contributing to both theoretical advancements and practical applications. To this end, the project integrates state-of-the-art knowledge from different disciplines such as algebraic topology, differential geometry, machine learning, and computer vision.



What you will be doing: You will conduct original research in the new and exciting field of topological deep learning and explore its applications across diverse domains. In particular, you will develop novel algorithms that leverage topological and geometric techniques. In doing so, you will collaborate with a team of expert researchers in computer vision, machine learning, and related fields. We strive in publishing in top-tier conferences and journals.

What we are looking for:

- Self-driven and motivated individuals with genuine love for this field of research.
- The applicant is also expected to have a strong track record in top conferences and journals on the field of machine learning / computer vision such as NeurIPS, CVPR, ICCV, ICML, ECCV, ICLR etc.
- We expect excellent skills in mathematics – especially knowledge in algebraic topology and differential geometry is a plus.
- Experience working with deep learning libraries such as Pytorch / Tensorflow is a must.
- Domain knowledge in proteins / molecules and familiarity with our software, TopoX, is a plus.
- Fluent written and spoken English skills as well as contributions to the group culture are expected.
- Applicants must hold a PhD in computer science, mathematics or equivalent.

What we can offer you:

- CIRCLE is a dynamic and growing group embodying inclusion as a core value. We are one of the leaders in topological deep learning.
- You will have the chance to work in a very exciting and newly developing area. This is a chance to grow and establish yourself as a leader in this field.
- You will receive dedicated mentorship as well as the freedom to explore your own ideas.
- You will work closely with a team of >6 PhD students and PostDocs from different backgrounds.
- We publish in the top venues of machine learning and computer vision. You will have the chance to present your work in person.
- Imperial's Department of Computing is the top-1 ranked computer science department in the UK, according to REF 2021.
- Imperial provides sector-leading salary and remuneration package (including 38 days off a year).

Check out the group at https://tolgabirdal.github.io/people.
If you require any further details on the role please contact: Prof. Tolga Birdal – tbirdal@imperial.ac.uk.