TOPOS INSTITUTE

Call for Applications: Postdoctoral Researcher

Topos Institute seeks to hire a renewable one-year postdoctoral position, beginning as soon as possible, to work on a project related to dynamical systems and data using the language of polynomial functions. Information on the precise project can be found here.

The Postdoctoral Researcher is responsible for leading research projects in line with Topos Institute's scientific strategy and mission. The Fellow will use techniques drawn from mathematics and computer science to advance sciences of connection and integration. Outputs include academic and advisory papers, research and consumer software, and educational materials.

Applicants must be strong in mathematics or computer science and know category theory. Strong programming experience or strong mathematical research experience is required, and a combination of the two is preferred. Applicants with underrepresented and diverse perspectives, personal or professional backgrounds, and life experiences are highly encouraged to apply.

This position reports to the Chief Scientific Officer and is based in Berkeley, CA.

Position Details:

- Job Title: Postdoctoral Researcher
- Salary: $75–85k
- Start Date: As soon as possible
- Position Type: Full-time
- Position Duration: Regular
- Job Location: Berkeley, CA (Required)
- Reports to: Chief Scientific Officer
- Funding: 1-year grant awarded by The Air Force Office of Scientific Research (AFOSR)
- Level: Individual contributor
- Travel Percentage: 5%

Position Responsibilities:

- This role will contribute to designing a proposed mathematical formalism for modeling, designing, and simulating very general sorts of interactions [Spi20]. The mathematical formalism for this application is well-known and quite elegant; in category theory circles it's known as polynomial functor theory, and it has been studied by many eminent mathematicians and computer scientists. The latter have emphasized its power in programming languages and in dynamical systems. In this project, the applicant will focus on the ways the same theory can be used to model interactions between systems.

- The three projects aimed at in this supplemental work study are:
    - To further consider learning organizations, a generalization of deep learning;
    - To develop the theory of collectives, a sort of economic system that falls out of the polynomial functor theory; and;
    - To flesh out the theory of universes in Poly.

Position Qualifications

- **Required**
    - Strong research experience in mathematics and/or computer science
    - Basic programming skills and ability to work with code; software engineering skills a plus
    - Proficient verbal and written communication skills necessary to interact in a clear and concise manner
    - Initiative and interpersonal communication skills necessary to work effectively in a dynamic team environment
    - Ability to contextualize work in wider cultural and social context, and consider possible positive and negative impacts of their work

- **Desired:**

    - PhD in the mathematics, engineering, or computer science
    - Knowledge and expertise in mathematics and computational science and software development
    - Experience in performing collaborative and interdisciplinary research
    - Excellent verbal and written communication skills
    - Experience and a demonstrated understanding of working in partnership with team peers, who engage, advocate, and contribute to building an inclusive culture, and provide expertise to solve challenging problems.

About Topos

Topos is a mission driven organization that works to shape technology for public benefit by advancing sciences of connection and integration. Our strategic plan is at the center of all our work together: https://topos.site/strategic-plan/.

Joining Topos means joining an exceptional team deeply committed to using their talents for the betterment of society, and a future of technology that belongs to the public. After two years incubating the idea at MIT, we opened our Berkeley office in 2021, and are growing fast, with an office in Oxford (UK) planned for the coming year. We're looking for team members who are as excited as we are at pioneering a new organizational structure for prosocial and ethical development of technology, from basic research to tool development to societal impacts.

Topos is committed to ensuring that its team members thrive in their work and home lives. Topos offers competitive salary and benefits including medical, dental, and life insurance, 401k, paid sick leave, 18 days paid vacation annually, 13+ paid company holidays, and options for flexible working hours. We seek to provide working conditions comparable with top-tier academic research institutions such as MIT, Stanford, and UC Berkeley.

Location in Berkeley is required and we anticipate most work days will involve time in our Downtown Berkeley office; nonetheless our culture is one of trust and autonomy, and some work from home is common.

Topos is an Equal Opportunity Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, or status as a protected veteran. More than this, we are committed to building a team where diverse voices will feel respected and heard.

Further information about Topos Institute can be found on our website (https://topos.institute), including information about our current team. See also our blog, YouTube, and research homepage.

Apply

If you have questions about this position, please contact Juliet Szatko at juliet@topos.institute. Applications will be reviewed on a rolling basis. All offers of employment are contingent upon completion of a background check. Unfortunately, Topos is not able to sponsor visas for applicants without US work status.

To apply, please send an application comprising a cover letter and CV/resume to juliet@topos.institute.

Please feel free to convey any information about preferred names and pronouns. Upon request, we are also able to provide reasonable disability-related accommodations during the application and interview process.