



Call for Applications: Postdoctoral Fellow

Topos Institute is searching for a **postdoctoral research fellow**. Topos is a non-profit scientific institute dedicated to shaping technology for public benefit. We use cutting-edge mathematical research, mainly **category theory**, to develop new computational tools that shape the way information flows through science, technology, and society. Our goal is a world where the systems that surround us benefit us all.

Position Summary:

- Topos institute invites applicants for a one-year postdoc position (though the position may be extended depending on funding) to work on a project related to dynamical systems and data using the language of polynomial functors. We are accepting applicants on a rolling basis, and applicants who can start sooner are preferred. Information on the precise project can be found [here](#). Applicants should be strong in mathematics or computer science and know category theory. Strong programming experience or strong math research experience is required, and a combination of the two is preferred.

Topos is committed to building a team with diverse perspectives and life experiences, so those with underrepresented personal or professional backgrounds are highly encouraged to apply. We are dedicated to shaping the future of technology to ensure a more equitable and just world, and we believe that a technology that supports a healthy society can only be built by an organization that supports its team members. As such, Topos is committed to ensuring that its team members thrive in their work and home lives.

Position Details:

- Job Title: Postdoctoral Fellow
- Effective Date: November 2021
- Position Type: Full-time
- Job Location: Berkeley, CA (Required)
- Salary Range: \$75,000-\$85,000

- Level: Individual contributor

Position Responsibilities

- The Postdoctoral Fellow 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 material.
- 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 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. Location in Berkeley required, but some work from home possible.

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.

If you have questions about this position, please contact our Operations Assistant 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 United States citizenship.

Further information about Topos Institute can be found on our website: <https://topos.institute>. Check out our [Blog](#), [Youtube](#), and [Research](#).

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

Your cover letter might describe your interest in Topos Institute and this postdoctoral position, your professional experience, your future goals, and your potential contribution to a diverse and inclusive environment at Topos. Please feel free also to convey any information about preferred names and pronouns.