



## Call for Applications: Summer Research Associate

Spend the summer in Berkeley, California! Learn and apply powerful emerging mathematics for connecting and creating communications within and between complex systems under the mentorship of experts in the field.

Topos Institute is searching for a **Summer Research Associate**. We are a non-profit research institute dedicated to shaping technology for public benefit. We use cutting-edge mathematical research, especially 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.

We are announcing four (4) Summer Research Associate positions for 2023. Four full time, hourly, temporary positions are available for 8 – 10 weeks each, starting in June and ending in August. Each position will be mentored by Topos research staff or a select number of invited mentors. Each Summer Research Associate will complete a specific Topos project, and will write a blog post during the last week of their employment. These projects may include an internal talk, work on a book, or publication.

Please visit <https://topos.site/summer/> to see the accomplishments of the previous cohorts.

Topics for 2023 include, but are not limited to:

- Work on project in applied category theory, logic, or programming language theory
- Specific topics, which may include but are not limited to:
  - Polynomial functors
  - Computational category theory using AlgebraicJulia
  - Geometry of interaction
  - Technology ethics

Topos will accept and process applications on a rolling basis, until all positions are filled, or until February 15, whichever is later.

All positions are up to 40 hours/week, and are subject to all federal and state labor laws.

See the full job description [here](#):

## POSITION SUMMARY:

- Research Associates will be responsible for supporting research project(s) in line with [Topos Institute's research strategy and mission](#). Projects could include using techniques drawn from mathematics and computer science to advance sciences of connection and integration, or investigations into the ethical and societal implications of such sciences. Example outputs include providing support to academic and advisory papers, research software, and educational materials.
- Topos Institute delivers fundamental and applied research capabilities in a wide range of areas, including applied mathematics and computer science, experimental computing systems, scalable algorithms and systems, artificial intelligence and machine learning, data management, workflow systems, analysis and visualization technologies, programming systems and environments, and system science and engineering.

Topos is committed to building a team with diverse perspectives and life experiences, so those with personal or professional backgrounds underrepresented at Topos 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: Research Associate
- Job Location: Berkeley, CA (Required)
- Position Type: Temporary FT OR PT
- Employment Type: Hourly
- Start Date: June 2023 onwards
- Salary Range: Starting at \$30/hour (commensurate with experience)

## POSITION RESPONSIBILITIES:

The position requires collaboration within a multi-disciplinary research environment consisting of mathematicians, computational and computer scientists, and domain scientists (both theoretical and experimental) conducting basic and applied research in support of Topos' mission. Specific responsibilities include:

- Participation in the development and analysis of new mathematical theories or new computational methodologies for scientific problems, often customized to complex and large-scale scientific applications.
- Delivery and support of mathematical technologies for various scientific disciplines and applications, and/or analysis, documentation, or guidance on their uses.
- Dissemination of research through peer-reviewed papers and technical reports, as well as seminar and conference presentations.

## **REQUIRED SKILLS & ABILITIES/WHAT WE SEEK FROM YOU**

- Awareness of Topos' core scientific areas, including category theory, type theory, and programming languages
- Strong collaboration skills to work in teams and engage with Topos constituents
- Motivation and persistence in pursuing new research ideas
- Excellent written and oral communication skills to expert, broad scientific, and public audiences, including familiarity with LaTeX typesetting
- Ability to contextualize scientific work in wider cultural and social context, and consider possible positive and negative impacts of their work
- Participation in the development of an inclusive and equitable culture at Topos and in the broader scientific community

## **EDUCATION AND EXPERIENCE:**

- Bachelor's degree (and graduate degree, or currently pursuing graduate degree) in Mathematics, Computer Science, Computational Science, Engineering, Physics, Philosophy, Sociology, Public Policy or a field relevant to the job duties of this position
- Experience developing or understanding mathematical theories or tools for engineering or science applications, with specific knowledge base as relevant to the project
- Experience doing research within a team environment
- Experience writing academic publications and/or working with modern scientific software tools and frameworks

## **About Topos**

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](mailto:juliet@topos.institute). Applications will be reviewed on a rolling basis. All offers of employment are contingent upon completion of a background check.

Topos is not able to sponsor visas for applicants.

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

**To apply, please fill out our [2023 Summer RA Application Form](#) by February 15, 2023.**