

Troy A. Brier, PhD

COMPUTATIONAL CHEMIST · BIOPHYSICIST

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Immunai Recruitment Team

April 9, 2025

IMMUNAI
430 E 29TH ST
NEW YORK, NY 10016

Job Application for Computational Biologist

To whom it may concern,

About Me

I am a physical chemist by training with a background in scientific computing, specializing on biological systems. Specifically, I have integrated principles from chemistry, physics, and statistics to investigate diverse phenomena within bacterial life, such as regulatory mechanisms for stress response and the interplay between the transcriptome and proteome. In my career, I have achieved proficiency in a wide array of computational tools to design and implement analytical pipelines within multiple computing environments (HPC, AWS, Docker, Conda) on various operating systems (Linux, MacOS, Windows) leveraging both custom and pre-built software with standard coding languages (Python, R, Bash, etc). Additionally, I have developed skills in designing, managing, and contributing to exploratory multi-year projects that require flexibility, self-assessment, reproducibility, and publication-level documentation. I have extensive experience working in highly collaborative environments, both domestically and internationally, and I am well practiced in presenting technical material to audiences of varying subject-matter expertise.

Why Immunai?

My former experience has given me a deep appreciation for scientific innovation and the need for more efficient and accelerated methods to translate innovation from the laboratory into real-world impact. I am motivated by the Immunai's mission to improve therapeutic decision-making throughout the drug discovery and development process, especially the ambitious objective of mapping the immune system at unprecedented scale and granularity. I am particularly drawn to Immunai's multidisciplinary approach because it highlights an understanding that many backgrounds, both scientific and cultural, promote breakthrough. I appreciate that this also extends to the partners for the company, pharma companies and research institutes, emphasizing to me an investment in improving therapeutics in the present but also in the future. I am excited at the opportunity to join the Immunai team and contribute to its vision with my computational skills.

Why Me?

As a computational chemist and biophysicist, I would bring a deep understanding of biological research complemented by hands-on experience in scientific computing across diverse computing systems and environments. I have significant experience with of Python and am proficient in R as tools to solve complex scientific questions including developing custom code for simulation and data analysis. Throughout my career I have worked with many data sets of varying types and sizes, and I am confident in my capacity to adapt, manage, and utilize new data sets to address challenging questions, regardless of data size. Most relevant to the position is my previous experience with NGS sequencing data from varying methodologies (Illumina, PacBio, and ONT), where I integrated various software and algorithms to compare and predict complex relationships between the data sets. My AI/ML experience is currently foundational. I have applied pre-built AI/ML approaches such as AlphaFold2 to aid in discovery. While I have no appreciable experience in constructing AI/ML solutions, I am eager to learn more about how to synergize AI/ML to enhance scientific discovery. I am confident I can work with diverse groups having collaborated with scientists from different technical and cultural backgrounds. My ability to achieve and communicate scientific discovery is exemplified through my publication and presentation record.

I was impressed by the personal traits section of the job posting. I think it is crucial to remember we, as scientist, are people with

vastly different personalities. A successful team is composed of diverse people who work together as a cohesive unit. I resonate strongly with the concept of prioritizing "We" over "I". In my opinion, such a mindset is necessary to make a real impact, something I aspire to accomplish. I describe myself as someone with a growth mindset. I believe someone should always be striving for progress. Consistent small improvement can lead to significant change. In summary, I believe my problem-solving abilities, commitment to learning and integrating novel techniques across disciplines, and aptitude for collaboration make me an ideal candidate for the **Computational Biologist** position at Immunai.

Thank you for considering my application. I would welcome the opportunity to discuss my qualifications further.

Sincerely,

Troy A. Brier, PhD