Dr. Zhian N. Kamvar
The Carpentries
(c/o Community Initiatives)
1000 Broadway, Suite #480
Oakland, CA 94607, USA July 22, 2023

Program Manager
Eric and Wendy Schmidt Center for Data Science and Environment,

I found the Research Software Engineer/Data Scientist position via recommendation by Dr. Rich FitzJohn and I am confident that I will excel in this role because in my **10 years in interdisciplinary open source scientific software development**, I have always focused on usability, reproducibility, and flexibility in my design. I am a software engineer at The Carpentries where I just finished developing infrastructure that supports researchers and educators in developing lessons for data science training. My background in **science communication**, discipline in collaborative software engineering practices (test driven development, CI/CD, trunk-based workflows, and project management), and **eagerness to learn and apply new skillsets** makes me an ideal candidate for this position. I am particularly excited to work in a role that will support researchers in understand the environmental challenges so they can make critical decisions that will have real impacts for our world.

My skill set lies in the intersection of software development, reproducible research, open science, and communication. **I have been collaboratively developing open source software on GitHub since 2013**. My most recent project is The Carpentries Workbench[1], a suite of R packages designed to build, deploy, and audit **reproducible data science lessons** built with R Markdown in a **platform indpendent** manner[2]. This was a ground-up redesign of the lesson infrastructure to **focus on the needs and working practices of our diverse community of volunteers**, allowing them to focus on the content of their lesson and not the tooling.

The work I did in academia gave me all the experience to produce **reproducible research**[3] and user-friendly scientific software[4]. My most successful software project is the R package *poppr*, which has been **featured in >1500 peer-reviewed scientific publications**. I strongly believe this project continues to be successful because I took a community-centered approach in its maintenance. With human-centered design, clear documentation, tutorials, workshops, and diligent forum moderation, I worked to **significantly reduce the barrier for reproducible population genetic analysis in R**.

These alone meet many of the qualifications for this position, but I believe my work at The Carpentries provides a set of critical skills that will set me apart from other candidates. At The Carpentries, I was able to hone my **skills in communication and DevOps** while developing valuable **project management** techniques that allowed me to effectively coordinate the **simultaneous development and deployment** of 4 R packages, a suite of GitHub actions, and the seamless transition[5] of > 50 active lessons maintained by > 100 volunteer maintainers, serving $> 10,000$ learners. anually.

The experience I have gained over the last decade has given me the technical and practical experience needed to be a successful research software engineer. I am excited for the opportunity to work in a team context building tools that will support researchers with data-enabled solutions to environmental challenges to make real-world impact on biodiversity and climate resilance. I would like to thank the recruitment team for consideration of my application.

Sincerely,

Zhian N. Kamvar, Ph. D.
(Attached: Resumé, references)

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[1]Workbench user manual: https://carpentries.github.io/workbench
[2]Workbench developer's guide: https://carpentries.github.io/workbench-dev/intro.html#sec-remote
[3]Reproducible Research using CI + Docker (Kamvar *et al.*, 2017) doi: 10.7717/peerj.4152
[4]poppr R package (Kamvar *et al.*, 2014) doi: 10.7717/peerj.281
[5]Automated lesson transition: https://github.com/carpentries/lesson-transition#readme