Job opening: Senior Software Engineer (Cambridge, MA)

CellProfiler open-source software

CellProfiler is launched 130,000+ times per year around the world by scientists quantifying biological processes in images. It is published in more than 2,000 scientific papers and has led to potential therapeutics related to the Ebola virus, tuberculosis, AMKL, leukemic stem cells, and CCM.

The Carpenter laboratory (a.k.a. Imaging Platform) at the Broad Institute of Harvard and MIT has an opening for a highly motivated senior software engineer to become part of the team to develop and maintain CellProfiler.

Our lab develops and applies methods for extracting quantitative information from high-throughput biological images. We collaborate with dozens of biomedical research laboratories to identify disease states, potential therapeutics, and gene functions from microscopy images.

We seek a software engineer with a strong record of accomplishment developing applications in Python in an environment that aspires to best software engineering practices.

What we want you to do:

- Enhance CellProfiler’s ability to work on microscopy slide data such as biopsy tissue sections
- Integrate CellProfiler into open-source image management systems
- Build REST interfaces to CellProfiler and deploy it in the cloud
- Improve our build process, integrating the best open-source imaging packages into CellProfiler
- Support our users via our forum, Github website and developer’s mailing list
- Represent us at community open-source hackathons and events
- Help researchers and institutions set up CellProfiler for cluster computing
- Build the next CellProfiler UI, solve novel problems in visualization and use unique technologies
- Work with Broad Institute’s groundbreaking IT group on some of the world’s biggest data and most important advances in health

We’re looking for someone who would enjoy the varied roles and level of ownership that come with working in a small group. Do you complement our skill set? If you know Linux, OS/X, web, authentication and cloud technologies, you will add a lot to our group. Familiarity with Numpy and scientific computing in Python is crucial; experience building Cython or C extensions is a big plus. Our group and software engineering at the Broad value best software practices in scientific computing; we’re looking for people who want to work in that sort of environment.

Please send resume and letter describing interests to massey@broadinstitute.org
JOB DESCRIPTION

TITLE: Senior Software Engineer
GROUP: Imaging Platform
SUPERVISOR TITLE: Anne Carpenter, PhD (Imaging Platform Director)
DATE: March 23, 2015

OVERALL RESPONSIBILITY
Contributes to software development for the critical open-source image analysis software CellProfiler (http://www.cellprofiler.org) as part of a two-person team. Works with users to select and design new features as well as interfaces to other software; works with internal and external CellProfiler software developers to design and implement code. Assists scientists and IT professionals in setting up CellProfiler in cluster/cloud environments. Answers technical questions and addresses bugs received via CellProfiler’s online forum. Works together with Broad Institute IT to design, implement, and maintain the Imaging Platform’s data storage and processing infrastructure strategy.

PRINCIPAL DUTIES AND RESPONSIBILITIES
● Effectively designs and implements entire object oriented modules/subsystems
● Works on software development, integration, improvement and maintenance
● Characterizes problem complexity and proposes effective solutions
● Writes technical specifications and defines compatibility requirements
● Leads and manages project activities from start to finish, participating in timeline negotiations for group project work, assigning project tasks and defining priorities
● Independently designs and implements solutions to complex problems with minimal supervision
● May participate in educational workshops to train users on new software and applications
● Occasionally represents the software project by traveling to scientific conferences and hackathons
● May perform other duties as assigned

MINIMUM QUALIFICATIONS
● Experience: 5+ years of software engineering experience, more experience preferred.
● Education: Bachelor’s degree required, preferably in computer science or related field.
● Excellent knowledge of Python, Numpy and Cython. Proficient in Java. Knowledge of or experience with image processing algorithms and packages is a plus.
● Proficiency in build systems, version control and continuous integration. Demonstrated experience building and packaging a Python application and its dependencies for deployment on multiple operating systems is a plus. Proficiency using GIT / github for version control is a plus. Knowledge of virtualenv, docker and Linux packaging is a plus.
● Familiarity with open-source development. Participation in an open-source project is a plus.
● Demonstrated success in technical proficiency and creativity.
● Demonstrated experience as owner and maintainer of a project’s subsystem or module.
● Demonstrated experience writing and maintaining unit tests. Experience in agile development or test-driven development preferred.
● Prior involvement or interest in biology or related environment a plus.
● Excellent communication skills and ability to interact with software engineers, data scientists, and biologists.
● Must be able to handle a variety of tasks, to develop solutions to serve multiple interests, and to effectively solve problems with numerous and complex variables.