# Contributing to Panda3D

Panda3D is an open-source, community-driven project, completely dependent on the

contribution of volunteers. As such we highly welcome you to contribute code to

the project. This document aims to outline some guidelines for doing so.

If you would like to contribute but aren't sure where to start, please visit the

[Get Involved](https://www.panda3d.org/get-involved/) page on our website, or

the excellent [Open Source Guide](https://opensource.guide/how-to-contribute/).

## Before implementing a change

We highly recommend that you file issues before making a change. Issues are

used to track bugs and feature requests but also to get feedback from the other

developers about design decisions or a specific implementation strategy.

It is important for acceptance that the change is implemented in a way that fits

the general design principles of the Panda3D API, and fits well with the general

priorities of the team. Therefore, prior discussion with other developers is

critical. Issues can be used to facilitate this, but we also invite you to

visit the #development channel on Discord (or #panda3d-devel on FreeNode IRC).

We also recommend that you familiarize yourself with the established coding

style and design patterns of Panda3D, to reduce the amount of changes that have

to be made during the review process.

## Submitting a change

All changes from non-core contributors are made via pull requests. This

requires you to fork the Panda3D repository, create a branch for your change,

push your changes to this branch, and request that this branch is merged into

the upstream branch. Each pull request is reviewed by a maintainer and

automatically tested for regressions and unit test coverage. The maintainer

will suggest any changes, which you can add by committing more code to the same

branch (you can do a force push if necessary). Once the change is deemed

acceptable, the maintainer will merge your change into the appropriate branch of

the repository.

To make it easier for the maintainer to review your changes, we highly recommend

that you give a clear and concise description of intent (linking to any issues

that are resolved by the change), as well as the inclusion of unit tests, which

contribute to a high level of confidence that this change does not break any

existing behaviours. We also recommend breaking up separate changes into

separate PRs, rather than submitting one big PR with several unrelated changes.

If your change is still a work in progress, please mark the PR as "draft". This

will prevent other contributors from receiving an email every time you push a

new change to your branch. Draft PRs can also be used to invite early feedback

on your change, especially if you are uncertain about whether you are going in

the right direction.

The code in the Panda3D repository is copyrighted to Carnegie Mellon University

and licensed under the Modified BSD License. By submitting your changes, you

accept that your code becomes placed under the same license. Except in specific

agreed-upon cases, we do not accept code contributions under alternate licenses.