

Interfacing with CPython from Gambit Scheme

MARC-ANDRÉ BÉLANGER, Université de Montréal, Canada

MARC FEELEY, Université de Montréal, Canada

We have previously presented an integration between Gambit Scheme and CPython [1]. That work combined a syntactic interface relying on a custom parser to facilitate writing Python expressions directly in a Scheme program, as well as a low-level integration typical of other Foreign Function Interfaces (FFI). The presented FFI uses a Foreign Procedure Call (FPC) mechanism to bridge the Gambit and CPython threading models. Python packages from the Python Package Index (PyPI) can now be used from Gambit Scheme, opening a world of mature Python libraries to Scheme developers. The FFI is freely accessible as the python module from the <https://github.com/gambit/python> GitHub repository.

Since publishing at the 2022 Scheme Workshop [1], we have received user feedback which will be addressed in this updated presentation. We will first explain the mechanics of our implementation, then go through all of the steps required to get up and running with the necessary software and end with a few examples. The demonstrations will be done on Linux but Gambit Scheme and its python module can also be used on macOS and Windows. In addition to static examples shown in the accompanying slides, we wish to give a live demo of the FFI to give participants a good overview of its usage.

CCS Concepts: • **Software and its engineering** → **Interpreters; Runtime environments; Extensible languages; Multiparadigm languages.**

Additional Key Words and Phrases: Scheme, Python, Foreign Function Interface, PyPI, Modules

REFERENCES

- [1] Marc-André Bélanger and Marc Feeley. 2022. A Foreign Function Interface between Gambit Scheme and CPython. In *Scheme and Functional Programming Workshop 2022*.