

FluCoMa SuperCollider

Release notes: production (1.0.9) → main

Repository	flucoma/flucoma-sc (FluCoMa SuperCollider extensions)
From (production)	ba24128 – 31 Aug 2025 – tagged 1.0.9
To (main)	50be406 – 24 Jun 2026
Scope	20 commits unique to main; 30 files changed (+126 / -96). production has 3 commits not on main, all merge commits with no content difference.

Summary

This release adds reproducible random seeding across the stochastic algorithms (NMF, KMeans, SKMeans, MLP, UMAP), a selectable initialisation method for KMeans and SKMeans, and a broad clean-up of the UGen rate checks. It also fixes several bugs affecting MLP model loading, Windows waveform colours, and file-path resolution for the bundled audio files.

Upgrade notes (action may be required)

- **Positional argument change.** A new `seed` argument was inserted in the middle of the argument lists of several classes (see below). Code that passes later arguments positionally (e.g. `windowSize`, `hopSize`, `fftSize`) will silently shift. Use keyword arguments or update call sites.
- **MLP parameter layout.** `FluidMLPRegressor` and `FluidMLPClassifier` now carry one extra parameter (`seed`), changing the internal parameter array. This is handled in the class code, but models saved or loaded across versions should be re-tested.
- **Matching flucoma-core.** The new parameters are passed to the compiled objects, so the extension must be built against a flucoma-core revision that supports them (the build fetches core via `FLUID_BRANCH`). Not verified here; please confirm before tagging.

New features

Random seeding

A `seed` parameter (default `-1`) was added so results can be made repeatable. Default behaviour is unchanged.

- Models: `FluidKMeans`, `FluidSKMeans`, `FluidMLPRegressor`, `FluidMLPClassifier`, `FluidUMAP`.
- NMF buffer processors: `FluidBufNMF`, `FluidBufNMFCross`, `FluidBufNMFSeed` (`kr`, `process`, `processBlocking`).
- NMF UGens: `FluidNMFFilter`, `FluidNMFMatch`, `FluidNMFMorph`.

KMeans / SKMeans initialisation

Both classes gain an `initMethod` argument (default `0`) with getter and setter, and it is included in the parameter array sent to the server.

Bug fixes

- **MLP loading (#198, #199).** Updating parameters after loading a saved MLP now counts them correctly from the array, for both regressor and classifier.

- **Windows FluidWaveform colours.** Colour-scheme CSVs are now read with the newline-handling flag, fixing a colour discrepancy on Windows.
- **FluidSTFTPass ignored parameters.** The constructor passed `hopSize = -1`, `fftSize = -1`, `maxFFTSize = -1` as assignments, overriding user values. They are now passed through.
- **Rate checks.** The checks that `max*` parameters are not modulated used hard-coded input indices that were wrong or stale. They now use the last input, or the correct index, for: FluidAmpGate, Chroma, HPSS, Loudness, MFCC, MelBands, NMFFilter, NMFFMatch, NoveltyFeature, NoveltySlice, OnsetFeature, OnsetSlice, Pitch, STFTPass, SineFeature, Sines and SpectralShape. NMFFilter, NMFFMatch and SineFeature also had their `maxComponents` / `maxNumPeaks` checks pointed at the correct input. A follow-up fixed an error in the MFCC correction.
- Corrected a few error-message and comment typos (e.g. `maxWindowSize` in FluidLoudness; `maxNumChroma` and `maxNumBands` comments).

Improvements

- **FluidFilePath.** Now locates the bundled `Resources/AudioFiles` folder by searching installed SuperCollider packages and caching the result, instead of assuming a path relative to the FluidDataSet class file. This works when the extension is installed in other locations (#200).
- **Build.** Sets CMake policy `CMP0177` to `NEW` to deal with CMake warnings.
- **Docs.** Removed the macOS dequarantine note from the README.
- Updated the FluidWaveform raster test scratch file (CSV flag and a smaller test case).

Commit log (main, not in production)

Commit(s)	Date	Change
50be406	2026-06-24	Fix error in the MFCC rate-check correction
aa41256 / 70c184a	2026-05-24	Fix many small bugs in class-definition rate checks
b907299	2026-05-24	Remove dequarantine note from README
ab4b3ca / 505b7d5	2026-01-23	Make FluidFilePath class more robust (#200)
55c1c73 / f0e410f	2026-01-11	Fix MLP parameter updating after loading (#199, fixes #198)
7275e9a	2025-12-13	Deal with CMake warnings
76d8e79 / 2f4a08f	2025-12-10	(S)KMeans: add random seed (#197)
a989703 / dc93ac0	2025-12-10	(S)KMeans: add initialisation parameter (#196, #178)
35b7d3f / ac5bec8	2025-12-03	Class definitions with seeding (#195)
7954685	2025-11-14	Fix Windows FluidWaveform colour discrepancy (CSV newline flag)
3a26ef5, e8c10df, 046aca1, 8fb8c5e	2024-11 – 2025-12	initMethod groundwork and merges for KMeans/SKMeans

Generated from git history between origin/production and origin/main. Descriptions of behaviour are inferred from the code diffs.