Golden Cheetah v3.0 Release Notes

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1 Whats New

1.1 500+ bug fixes and minor enhancements

Over the last 3 years the performance and stability of GoldenCheetah has been improved considerably. One of the major criticisms of the software was it crashing.

We have fixed 46 serious issues and over 400 bugs in over 1,500 different commits. GoldenCheetah is now over 100,000 lines of code and is used by 1000s of users around the world, from Santiago to Singapore and Auckland to Aberdeen.

In addition to addressing stability issues we have also looked closely at performance. Whilst the new metric functionality and database means that a modern PC is recommended, the code is still efficient enough to run on a netbook.

We have introduced pre-computed metrics alongside a cache of ride bests across all the main data series to ensure that analysis of long term data is as quick and responsive as possible. We also introduced our own file format using JSON as an open file format, with a custom parser. We can now read a 1hr ride 20x faster using our native format than using an equivalent and very popular XML format.

In short, we've squashed the big bugs and made it run much faster.

1.2 Redesigned UI and UX

One of the most immediate changes you will notice with v3.0 are the major changes to the user experience and user interface. From the initial help screens for new users through to the redesigned preferences pane for advanced users, it is slicker and more professional.

We wanted an elegant and clean user interface that was intuitive to use and revealed complexity when it was required. We think we've come pretty close.

There are 4 views available with specific and detailed sidebars for peformancee tracking (home), short term tracking (diary) as well as the well known analysis and training views from earlier releases.

We now allow you to view charts tabbed and tiled, you can resize and move charts around and customise them using roll-over controls. The activity list is fully configurable and can be configured to show any number of columns. We have overhauled and introduced friendly wizards for adding devices and athletes through to manual activity entry.

The UI is largely native on a Mac and the same UI and UX has been replicated on Linux and Windows. We also support full screen including Lion fullscreen support on a Mac.

We have been through many, many iterations to get to this UX and it has been widely tested and critiqued by a large community of GC users.

We think this is the best looking and most intuitive version of GoldenCheetah ever released.

1.3 Support for the latest bike computers

We have added direct download support for the Cyclops Joule and Joule GPS as well as the latest SRM Powercontrol 6 and 7. We also added support for the O-sync Macro and Macro X.

In addition to this we also fixed a few issues related to importing from newer Garmin devices since the file format changed.

1.4 Support for more telemetry

Alongside the support for the latest bike computers we also added the ability to track and plot new data series, including; Headwind, LR Balance, Temperature and Slope.

1.5 Export and Batch Export as well as lots of new file formats

We will now export and batch export your data to a wide variety of file formats. We believe it is your data and it should not be locked into any sotfware. We support open formats such as TCX, PWX, JSON and XML as well as FITLOG and GPX.

We have also added support for reading files from SportTracks, GPX, Tacx CAF and the SLF/SMF file formats. We have also added legacy WKO+ file format support (CP 1.0 and 1.1) as well as import of Wattbike TXT exports.

1.6 Support for a wide selection of Cloud services

We can now upload and download data from cloud services offered by; Withings, Zeo, Strava, TrainingPeaks, Training Stage Buch, RideWithGPS as well as Internet based calendars (calDAV) such as Google Calendar.

1.7 Improvements to Aerolab

There is now an autosolver for CdA and Crr Estimation in Aerolab that removes a lot of the guesswork from curve fitting in Virtual Elevation as well as a handy Air Density (Rho) estimator.

1.8 Realtime training significantly enhanced

We now support Native ANT+ removing the need for quarqd. Video Playback is built in using VLC/QTKit. We manage a media library to make sure you can re-use any content you may have from Tacx Ergvideos through Sufferfest.

We support Virtual Power for popular devices from KK, LeMond and many other trainers. We have added support for the amazing new Wahoo Fitness Kickr trainer as well as the old Tacx Fortius.

In the train view we have added lots of new ways to ride on the trainer including; Streetview, SpinScan (on Computrainer) and an enhanced Workout Plot that plots telemetry against the workout as you ride.

Finally we've added Computrainer calibration, a workout wizard and download from ErgDB as well as Multi-device Support allowing you to ride with with your ANT+ powermeter on your Computrainer, Kickr or Fortius.

1.9 Advanced search and data filtering

We now offer the ability to use free text search across all ativities, enabling lightning quick searches for past activities. We use a well proven and lightning fast indexing tool (CLucene) to index all the details of your activities seamlessly.

Additionally we have introduced a data filter (using the same search box) to allow you to filter activities for specific properties, for example for all rides with a TSS > 300 or perhaps those with an IF >0.9 and a duration of > 1hr.

Both the search and filter functions can be applied to the charts – which means that you can plot a PMC only where sport is "Bike" or perhaps power distribution but only where the workout code is FTPTEST.

We are still discovering how powerful these tools are when applied to long term performance tracking.

1.10 Lots of new charts

It wouldn't be a new release of GoldenCheeth if we didn't introduce some new charts for detailed forensic data analysis.

We've added a new HR to Power analysis as well as a more utilitarian 2d scatter plot. We've added Bing as map provider for the Map chart.

But the single most asked for feature, and one that has been on the GC wish list since it was first released is the ability to plot a distribution for a date range. We can now do that – allowing you to plot power distribution for a season or month or any number of sophisticated date ranges (we also added lots of advance ways to express date ranges).

Lastly, we have also extended the CP curve to plot more than just power. It will now plot a mean max curve for HR, Power, Speed, Cadence, xPower, NP et al. And we even added VAM too, for you mountain goats.

1.11 New metrics, including TrainingPeaks' TSS and NP

Yes, we've been granted permission by our friends at TrainingPeaks to use their cylcing metrics in the latest version of GoldenCheetah. We know that it is one of the most popular additions.

Not only have we added them as metrics to plot and track, we've also added them to the realtime training so you can target an intensity of stress for a workout and monitor and adjust the intensity of the workout as you ride.

We have also added a whole host of new metrics, there are now over 100 different metrics and measures you can work with including things like; Pace, Maximums, Gradient, VAM, wpk, time in HR Zones and many, many more.

1.12 Build and Platform support

For the technical amongst you we have removed mandatory Boost Dependency, which means you can build GC with nothing more than QT4.8 installed (we will support QT5 in v3.1). We now support OpenBSD and have moved to using version 6.1 of the QWT library.

On a related note, you can see all the versions used, contributors involved and build settigs as we have improved the about box to give much more useful information to developers.

1.13 We wrote some documentation!

Shock. We now have an FAQ covering over 50 of the most commonly asked questions about GoldenCheetah. And a full user manual to compliment the existing wiki for user generated content.

One of the other criticisms we often heard about GoldenCheetah was how hard it was to use, and how you needed to be a cycling nerd to understand it. We feel that the new UI and User Experience coupled with much better documentation and help mean this should make this version of GoldenCheetah the easiest to use yet.

2 Contributors

2.1 Credits and Contributors

Literally thousands of people regularly download, install, develop, critique and discuss GoldenCheetah and its features and functions.

By far and away the biggest contributors to this project are Damien Grauser and Mark Liversedge. Between the two of them they have committed almost 90% of all code to GoldenCheetah in the last 3 years. Often working on stuff for others they are the reason this release is written for you the cyclsit .. and not us the developers.

Of equal importance is Gareth Coco is our devops guru, with unfathomable patience has built release candidates and development builds for the last 3 years working with an ever changing and hideous array of wacky dependencies across Windows, Mac and Linux. He is the reason you can download and install our software. Big, big thanks to Gareth.

Thats not to say that there aren't many other significant contributions too; Ale Martinez has masterminded and developed the multi-language support and translations have been undertaken by Ale himself, but also translations were provided by Til Schmiedeberg, Keisuke Yamaguchi, Marco Piccirilli, Sergei Chekhovskii and Rafael Oliveira Ribeiro.

A large number of developers have contributed small and large bits of code, and many clever coaches and athletes have donated their ideas and best practices. I must shout out to Dr Andrea Morelli the professional coach, for his encouragement and insight over the last 3 years and Greg Steele for some of the most interesting and inspriring thoughts.

Here are all the contributors, all of them have made this version of GoldenCheetah the best yet;

Alejandro Martinez, Andrew Bryson, Andy Froncioni, Austin Roach, Berend De Schouwer, Bruno Assis, Chris Cleeland, Claus Assmann, Dag Gruneau, Damien Grauser, Darren Hague, Dean Junk, Eric Brandt, Eric Murray, Frank Zschockelt, Gareth Coco, Greg Lonnon, Ilja Booij, Jaime Jofre, Jamie Kimberley, Jim Ley, John Ehrlinger, Josef Gebel, Julian Baumgartner, Julian Simioni, Justin Knotzke, Keisuke Yamaguchi, Ken Sallot, Luke NRG, Magnus Gille, Marc Boudreau, Mark Liversedge, Mark Rages, Mitsukuni Sato, Ned Harding, Patrick McNerthney, Rainer Clasen, Robb Romans, Robert Carlsen, Roberto Massa, Ron Alford, Sean Rhea, Steven Gribble, Thomas Weichmann, Walter Burki.

Finally a big shout out to three amazing people; Jamie Kimberley who has been the glue that held the GoldenCheetah community together, Robert Carlsen who has always been the cool guy in the glasses that does the cool stuff. And last but not least, my friend Justin Knotzke who demands and gets the best from all of us.

Jamie, Ron and Justin have stepped away from regular involvement in GoldenCheetah, but their contributions have set the standard and will not be forgotten. Cheers guys.