

Genetic algorithm using the evola package

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The evola package is nice wrapper of the AlphaSimR package that enables the use of the evolutionary algorithm to solve complex questions in a simple manner.

The vignettes aim to provide several examples in how to use the evola package under different optimization scenarios. We will spend the rest of the space providing examples for:

- 1) Optimizing a multi-trait scenario
- 2) Obtaining optimal crosses in plant breeding
- 3) Obtaining optimal individuals in plant breeding
- 4) Optimizing a sparse testing allocation in plant breeding

1) Optimizing a multi-trait scenario

TBD.

```
library(evola)
# TBD
```

2) Obtaining optimal crosses in plant breeding

TBD

```
# TBD
```

3) Obtaining optimal individuals in plant breeding

TBD

```
#TBD
```

4) Optimizing a sparse testing allocation in plant breeding

TBD

```
# TBD
```

Literature

Giovanny Covarrubias-Pazaran (2024). evola: a simple evolutionary algorithm for complex problems. To be submitted to Bioinformatics.

Gaynor, R. Chris, Gregor Gorjanc, and John M. Hickey. 2021. AlphaSimR: an R package for breeding program simulations. *G3 Gene|Genomes|Genetics* 11(2):jkaa017. <https://doi.org/10.1093/g3journal/jkaa017>.

Chen GK, Marjoram P, Wall JD (2009). Fast and Flexible Simulation of DNA Sequence Data. *Genome Research*, 19, 136-142. <http://genome.cshlp.org/content/19/1/136>.