SPARK SUMMIT

Lucid - Genetic Programming for Apache Spark

Jakub Guner, Poznan University of Technology

#EUres4

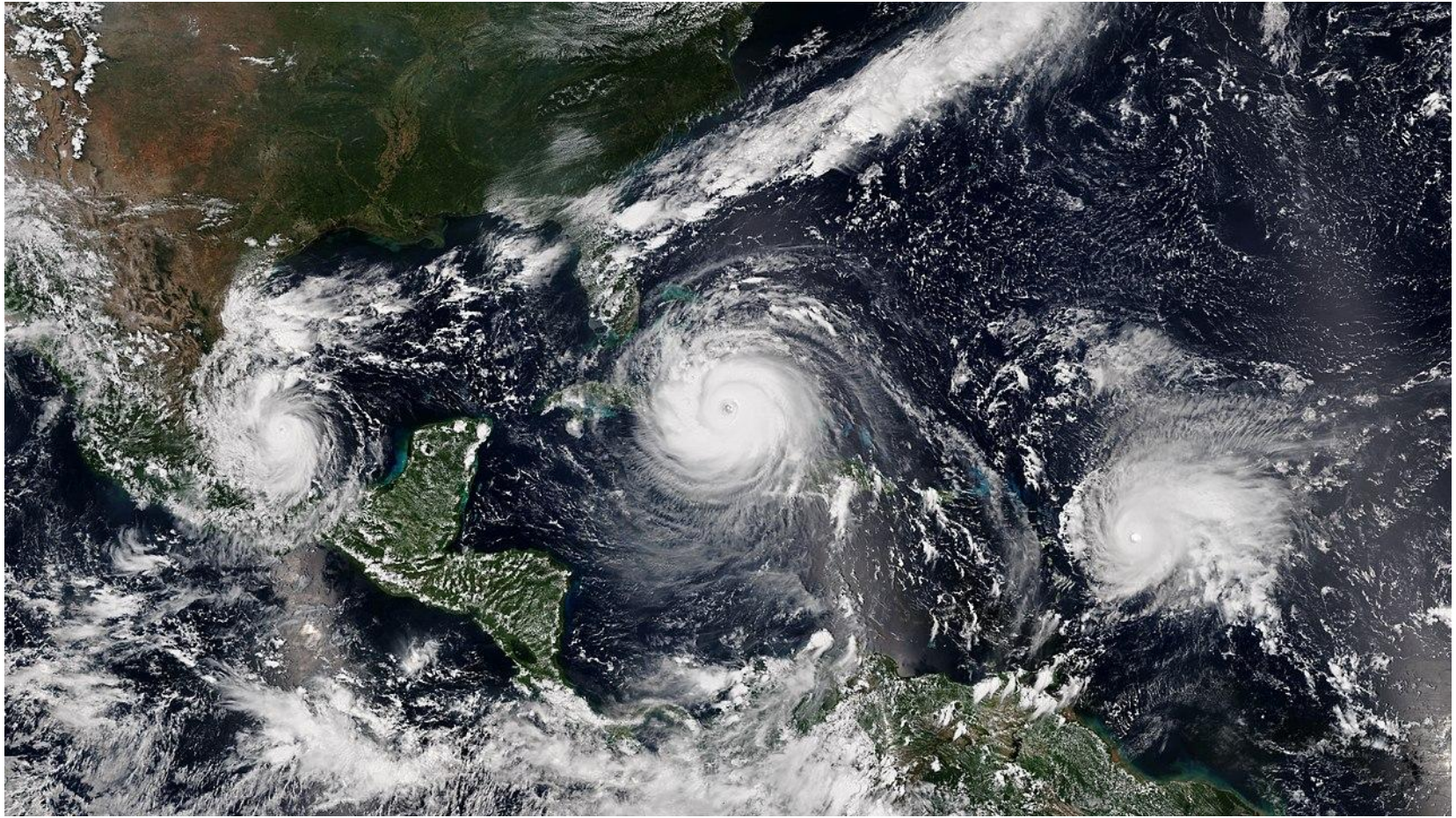
I. Discovery

II. Survival

III. Curiosity

IV. Trust

I. Discovery



Canada
Coast Garde
Guard côtière
Canada
SHEBA
ANDREAS
XCAR/PAX-
1

$$H = \rho c_p C_h * TempDiff * WindSpeed$$

Temperature difference

Speed of wind

Genetic Programming for Estimation of Heat Flux between the Atmosphere and Sea Ice in Polar Regions; Stanislawska, Krawiec, Vihma, GECCO, 2015

$$H = \rho c_p C_h * TempDiff * WindSpeed$$

Temperature difference

Speed of wind

$$0.39 - 1.953 * TempDiff * 0.893^{TempDiff} *$$

$$* [\frac{WindSpeed}{0.798^{TempDiff}} - TempDiff + 0.0126 * (SpecHum - NetShort + 0.405) *$$

$$* (TempDiff - 0.0146 * NetLong * 0.636^{TempDiff})] \quad (1)$$

Temperature difference

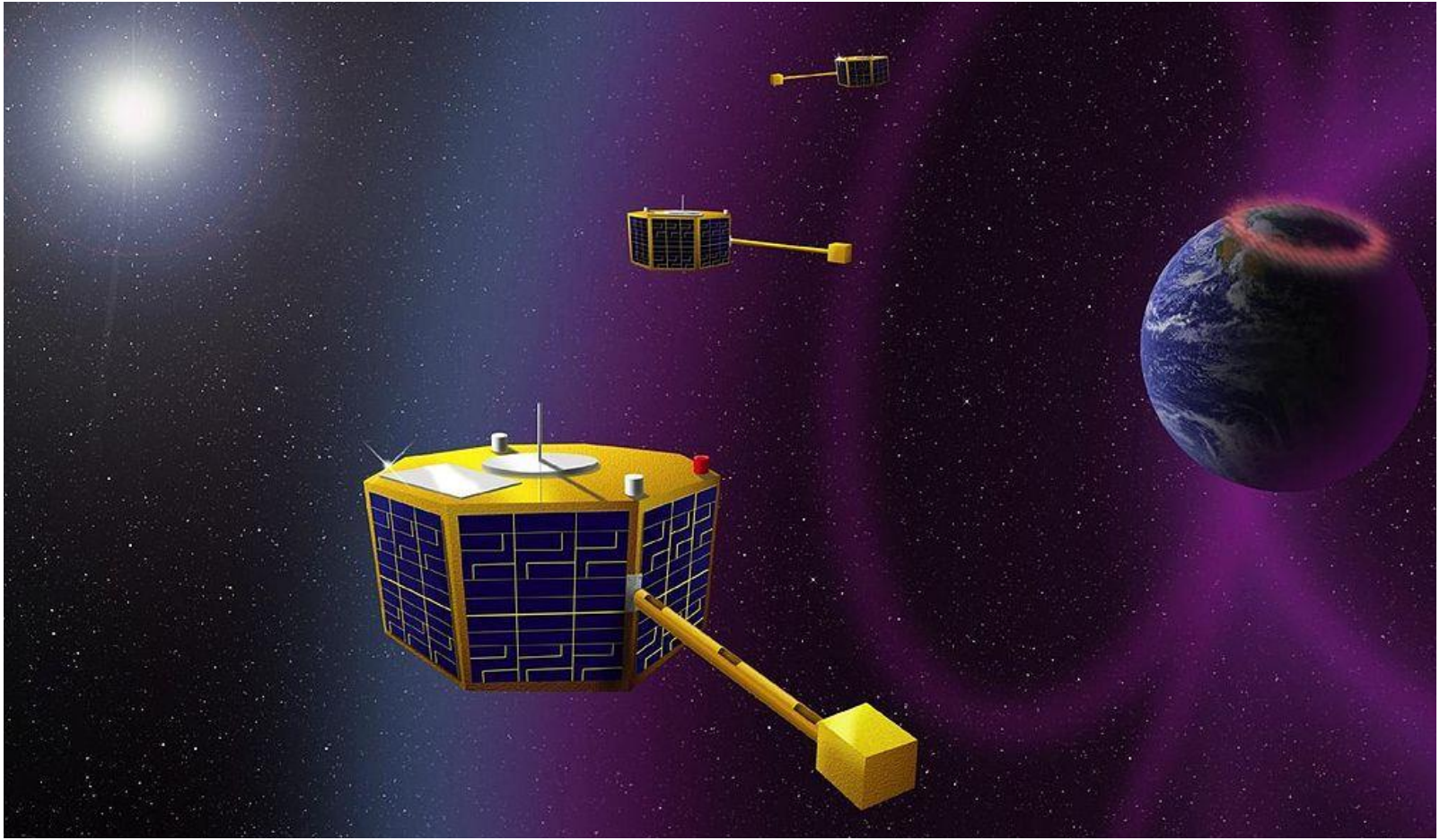
Speed of wind

Solar radiation

Humidity

Genetic Programming for Estimation of Heat Flux between the Atmosphere and Sea Ice in Polar Regions; Stanislawska, Krawiec, Vihma, GECCO, 2015

II. Survival



Computer-Automated Evolution of an X-Band Antenna for NASA's Space Technology 5 Mission; Gregory. S. Hornby, Jason D. Lohn, Derek S. Linden; Evolutionary Computation 2011 19:1, 1-23

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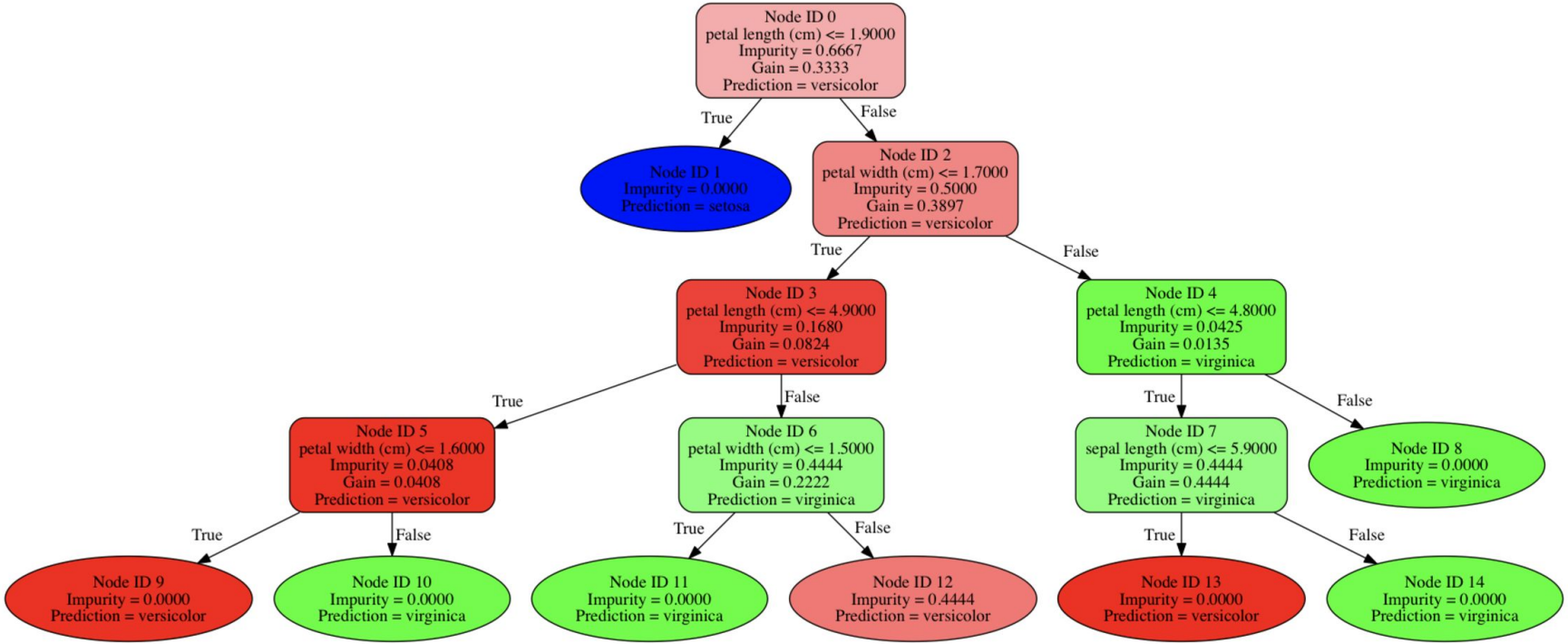
III. Curiosity

Spark summit
EUROPE 2015
DATA SCIENCE AND ENGINEERING AT SCALE
AMSTERDAM OCTOBER 27-29
#sparksummiteu
zalando
LIFE
Cloudwick
Typesafe
play
STRATIO
LONDON

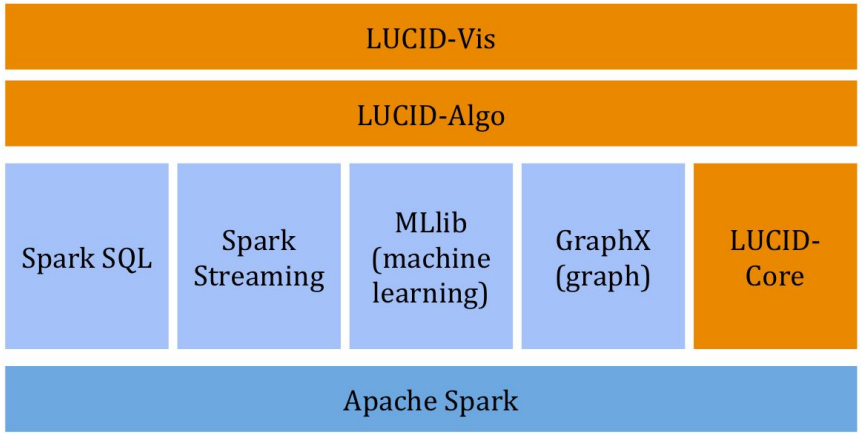
spark-tree-plotting



LUCID

- transparent models
- rules and symbolic expressions
- MLlib Pipelines
- export to Latex
- spark-packages

www.cs.put.poznan.pl/lucid



IV. Trust

Sheri Eastman

Sheri Eastman

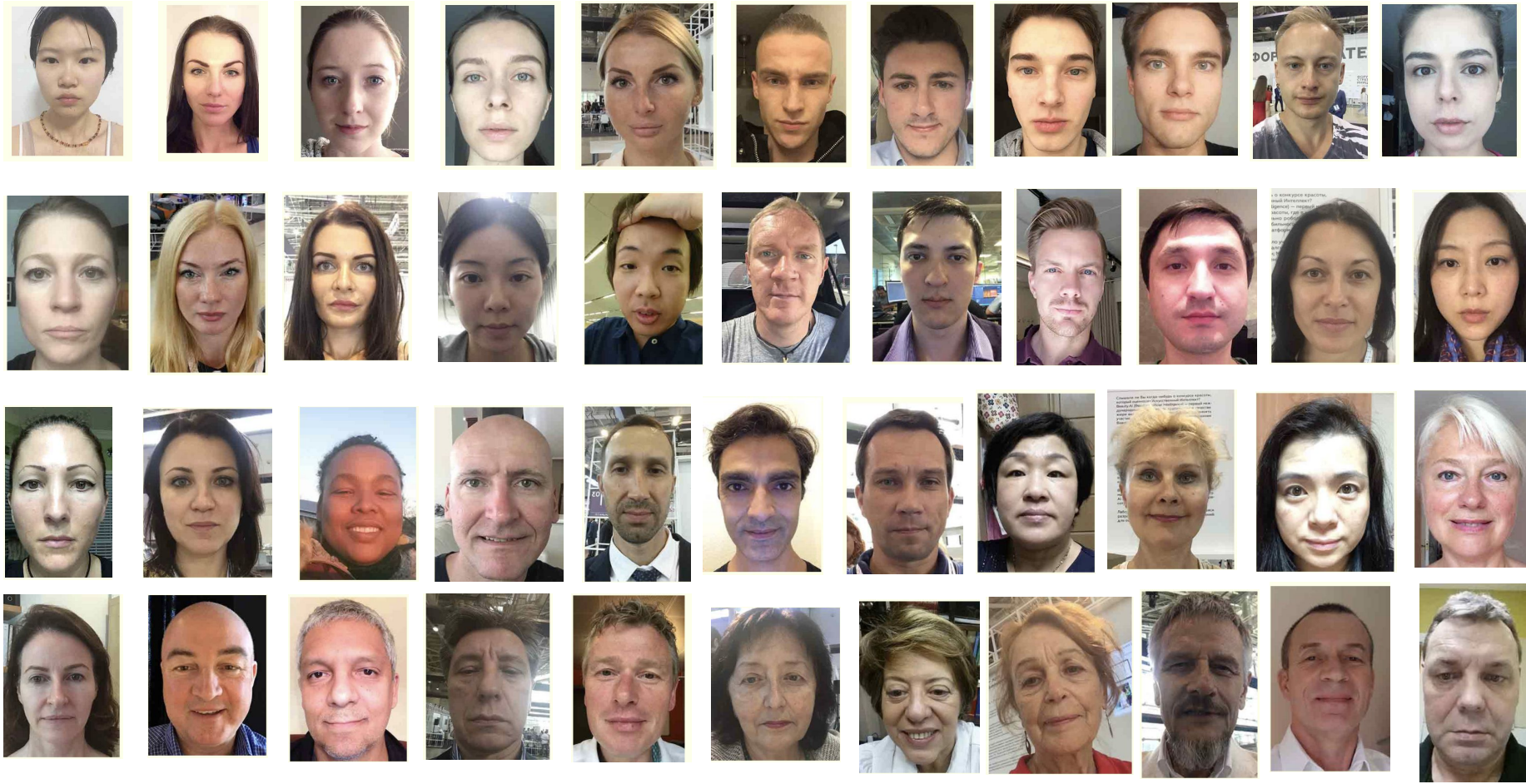
Beauty.AI

Sheri Eastman

Beauty.AI

PIMPL

RYNKL



Science behind this

What matters in beauty is perception. Perception is how you and other people see you, and this perception is almost always biased. Still, healthy people look more attractive despite their age and nationality.

This has enabled the Youth laboratories team of biogerontologists and data scientists, who believe that in the near future machines will be able to get a lot of vital medical information about people's health by just processing their photos, to develop a set of algorithms that can accurately evaluate the criteria linked to perception of human beauty and health where it is most important – the human face. But evaluating beauty and health is not enough. The team's challenge is to find effective ways to slow down ageing and help people look healthy and beautiful.

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GDPR's Right to Explanation: the pros and the cons

Corporate · algorithm · GDPR · PredPol · right to explanation

Under the General Data Protection Regulation's Right to Explanation a user can ask for an explanation about an algorithmic decision made about them – but with it comes positives and negatives.

22/05/2017 BY: BILL BRENNER

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Sources

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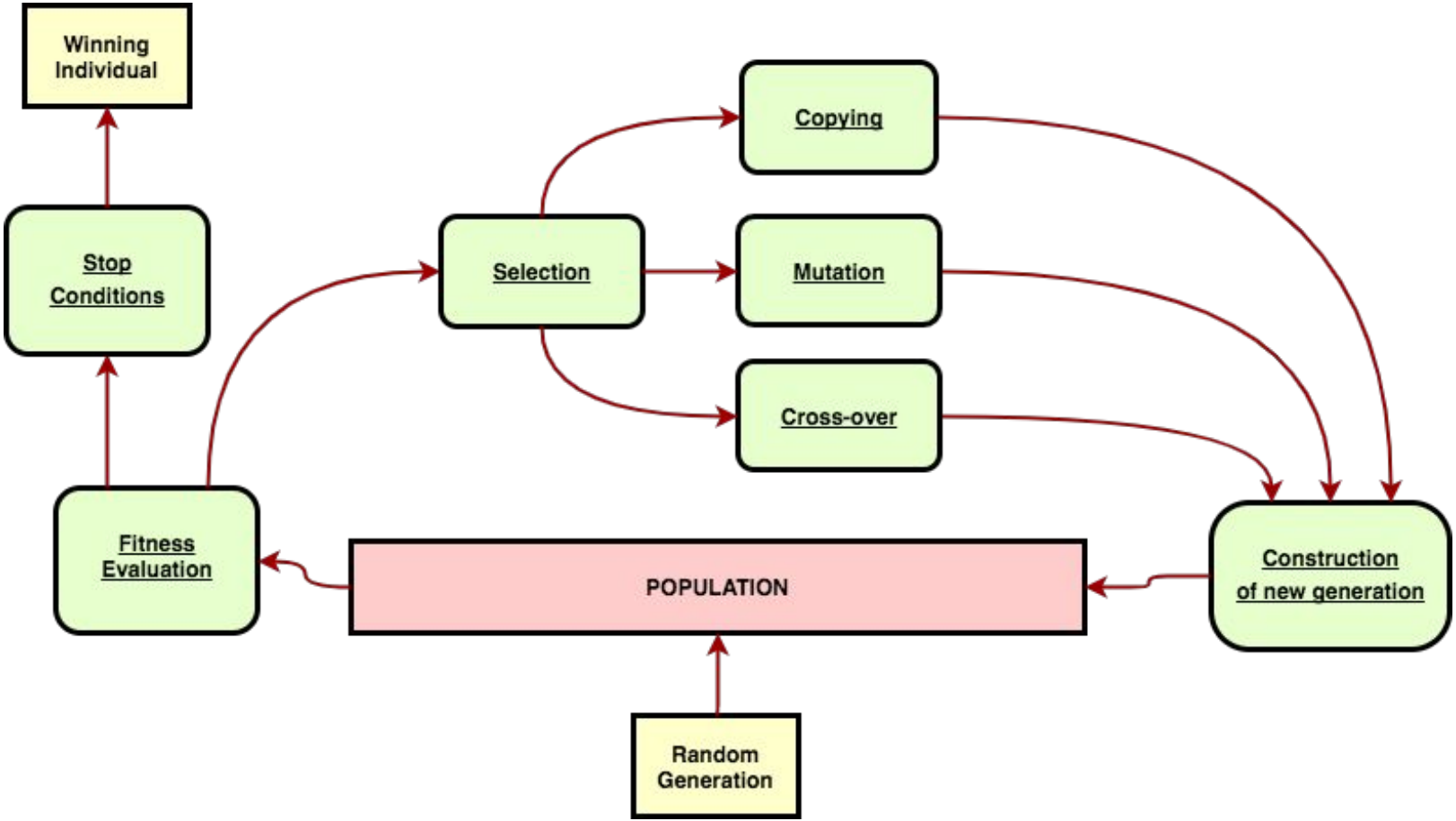
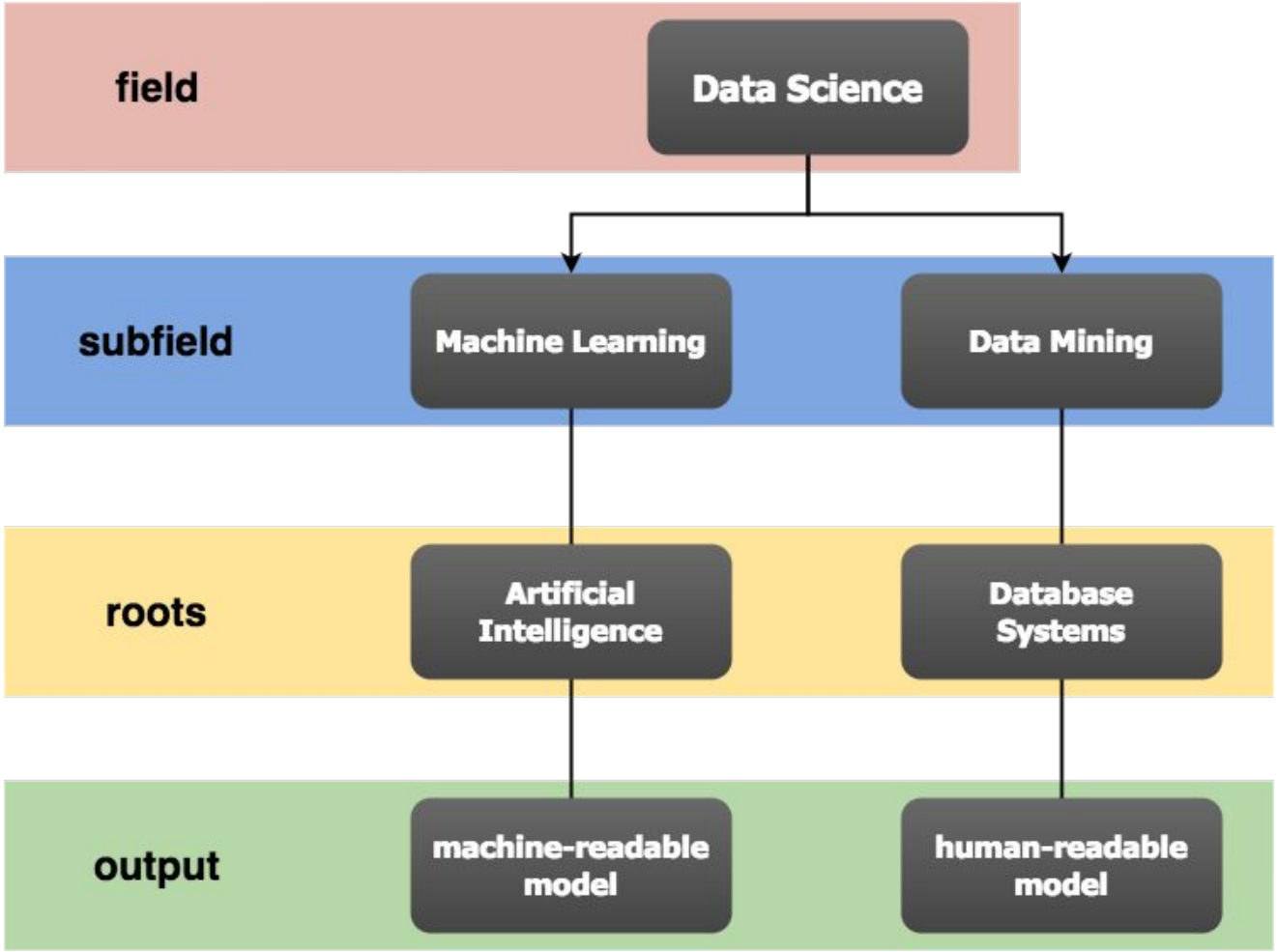

Winning Individual
Copying
Stop Conditions
Selection
Mutation
Cross-over
Fitness Evaluation
POPULATION
Construction of new generation
Random Generation


field
Data Science
subfield
Machine Learning
Data Mining
roots
Artificial Intelligence
Database Systems
output
machine-readable model
human-readable model