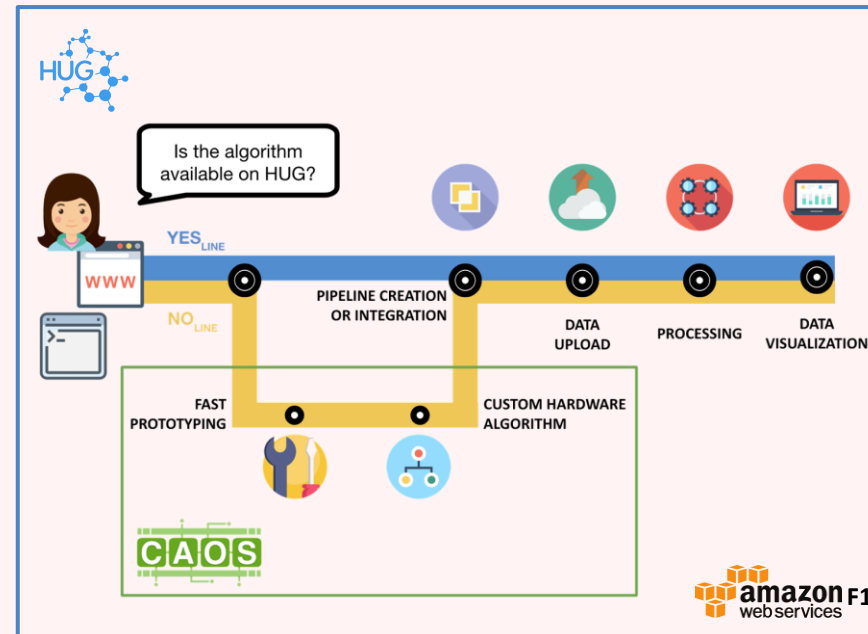


HUG



- Recent advancements in genomic research allow DNA analysis to be used in different fields, from *agritech* to personalized medicine.
- Genomics algorithms are both fast changing and computational intensive.
- The learning curve for designing custom hardware is steep.
- HUG** is a framework for genomics research allowing exploitation of reconfigurable hardware architectures.

HUG + CAOS

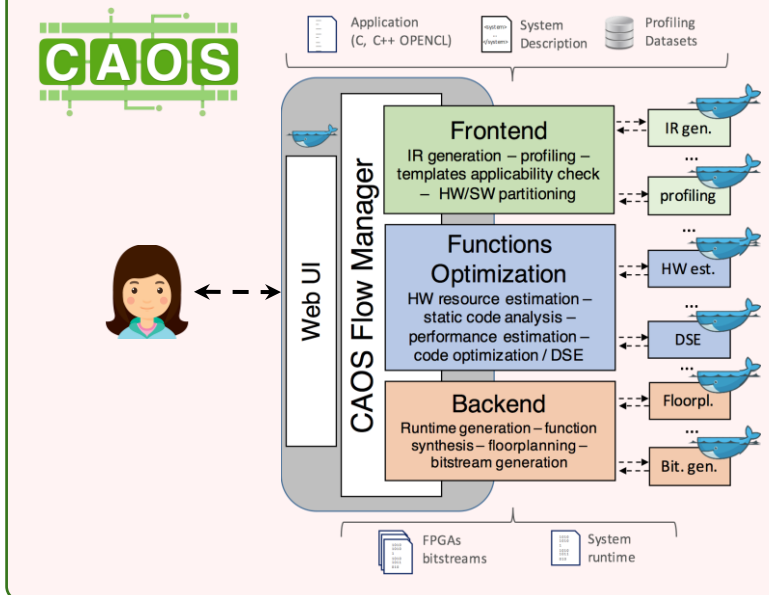


The CAOS framework

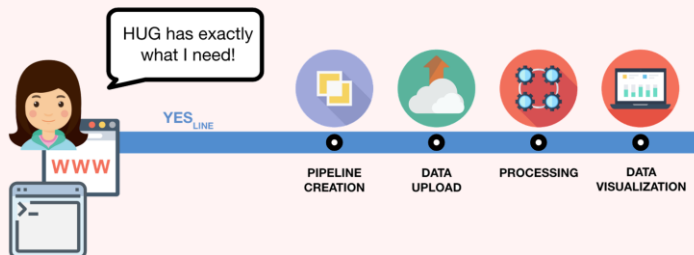
PROBLEM: The widespread adoption of FPGA-accelerated solutions is limited by their complexity of their design.



SOLUTION: CAOS is an open-research platform that helps developers in accelerating software applications on reconfigurable hardware.



Genomics Hardware Pipeline



Core points

- FPGA technology** can be used to accelerate genomic pipelines
- FPGAs offer the high level of parallelism and an optimal **performance/power consumption** ratio
- However, hardware design expertise is usually required to use FPGAs
- HUG** and **CAOS** allow application domain experts to exploit the advantages of FPGAs without requiring hardware design expertise

Acknowledgements/References

