

Strategic Decision-Making in Drug Production: A Data-Driven Approach

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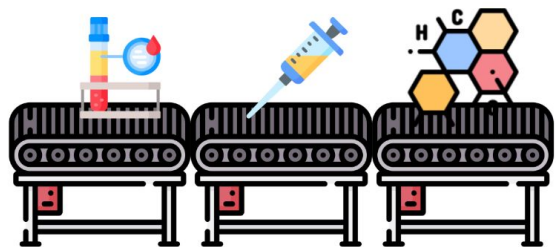
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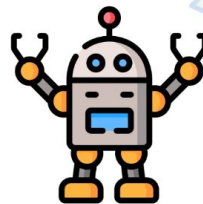
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*We developed a toolkit named **ROSA** (**R**oche **O**ptimal **S**cheduling **A**ide) to help answer all these inquiries!*

How ROSA Works



Allocator



What is your duration?

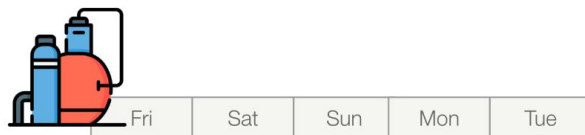
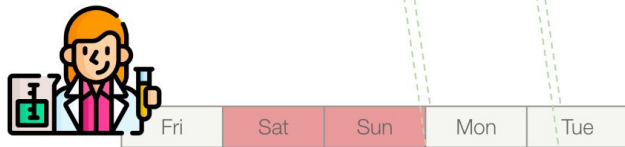


What are your constraints?



What resources do you need?

Resources & their schedules

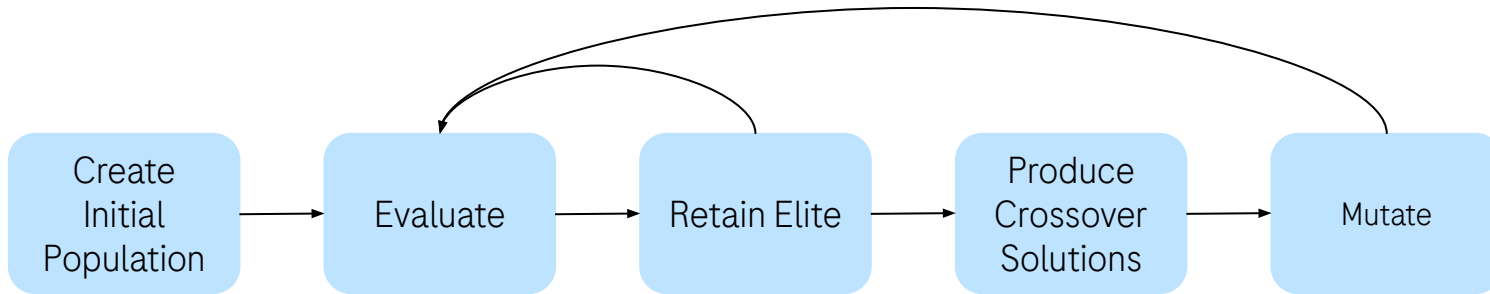
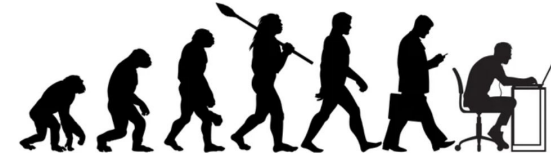


Parameter store



How ROSA Works

ROSA optimizes based on an **evolutionary algorithm**.



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- **Planned downtime** has a significant and often overlooked influence on E2E lead time.
- By **optimizing scheduling**, we reduce planned downtime and enhance overall **production capacity**.
- ROSA is **easy to implement** - no mfg. process changes, no regulatory approval needed, no quality impact.
- ROSA has been applied in drug product & drug substance manufacturing and quality control for **optimizing production & testing schedules**, as well as **evaluating alternative scenarios**.

Doing now what patients need next