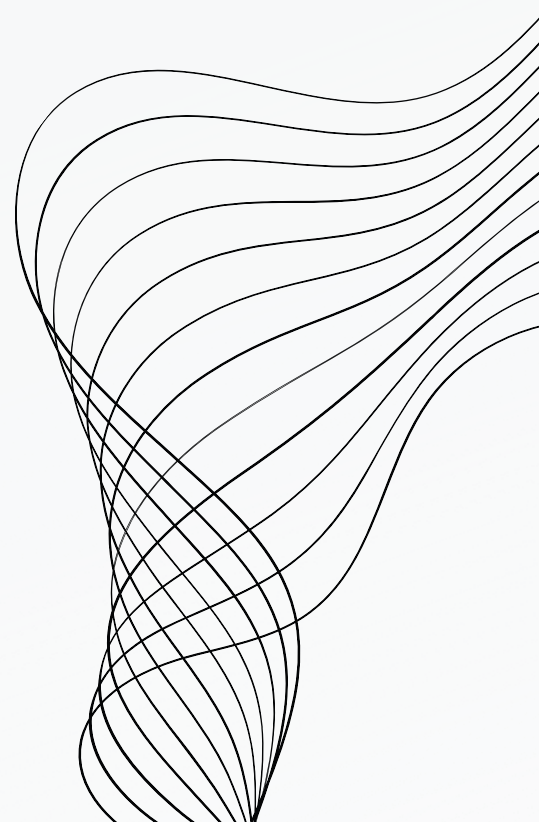


Parameter Optimization Simulation tool based on Search-Based Software Engineering (SBSE)

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OVERVIEW



Optimization NOT just Prediction :

Right now the IEF measures the environmental impact but does not provide suggestions to improve it

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Multi-objective search-based optimization:


The tool analyzes and fine-tunes software parameters to achieve the best balance between environmental friendliness and operational efficiency

GOALS

- **Optimisation**
 - **optimisation suggestions/solutions.**
 - Demonstrate **trade-offs.**
- **Comparison**
 - **compare configurations horizontally,** and highlight significant differences.
 - Compared data should include the simulation results.
- **Automation**
 - **Automate the simulation procedure**
 - Only crucial operations should require decisions from users
 - Automation of deployment
- **Versatility / Flexibility**
 - **More parameters such as location, time, etc.**



STAKEHOLDERS

1. Anyone involved in software develop & deploy process
 - a. IF will impact the configurations of their apps
 - b. Expectation: user-friendly
 2. Green Software Foundation
 - a. Expectation: the tool can be adopted widely
 3. Large corporations
 - a. IF helps them optimise the energy efficiency of their software
 - b. Expectation: Availability on all platforms
 4. Open-source community
 - a. Expectation: all developers can contribute and benefit from it
 5. Cloud Service Providers
 - a. Provide information (ex. energy consumption, server utilization on cloud)
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FIT INTO THE CURRENT SYSTEM

