Towards Flexible Automated Support to Improve the Quality of Computational Science and Engineering Software

Davide Falessi*, Forrest Shull
Fraunhofer Center for Experimental Software Engineering, USA

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Agenda

- Introduction
- Aim
- Current challenges
- Overview of the proposed solution
- Principles of the proposed solution

Introduction

- **Continual evolution** of the available hardware (e.g. in terms of increasing size, architecture, and computing power) and software (e.g. reusable libraries) is the **norm rather than exception**.

- These evolutions should be **opportunities** rather than sources of software engineering **problems**.

Aim

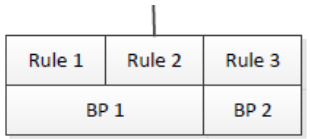
- Sketch a **flexible automated solution** supporting scientists and engineers in developing **accurate and reliable** CSE applications.

- Our **goal** is to enable CSE developers to spend more of their time **finding scientific results** rather than fixing maintenance problems.

Current Challenges

- **Difficult V&V.**
- **Education.**
- **Tradeoff between medium and long term goals.**
- **Software engineering Best Practices (BP) are not adequately tailored.**

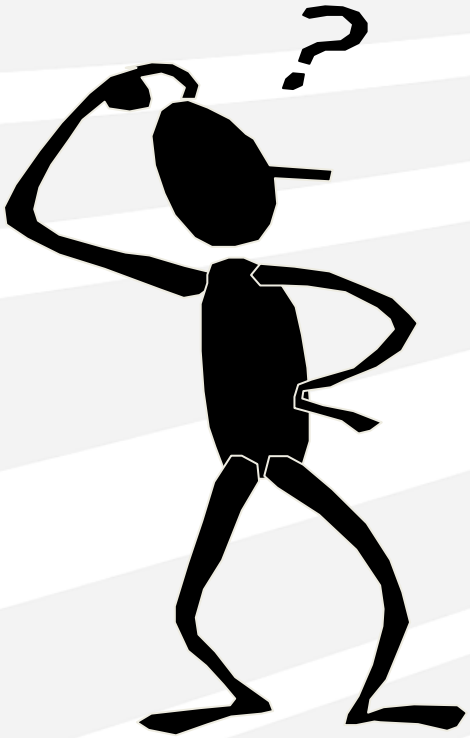
Overview of the proposed solution



Principles of the proposed solution

- **Automation** in metrics collection, storage, and data-mining allows us to easily formalize and transfer SE knowledge to developers.
- **Flexibility** to avoid the strict enforcement of any rules which would make the developers reject the tool in practice.
- **Iteration** for facilitating the transition towards the application of well-established BPs and enabling customization.

Contact Information



Davide Falessi

dfalessi@fc-md.umd.edu