

How to Write a Project Proposal

What is the problem you are addressing?

What is the context?

What is your approach?

How will you evaluate your approach?

Based on your results what future directions will be possible?

What is the timeline of deliverables?

Approach Outline – Example 1a

FuBaz is a great new parallel programming model.

We will implement a small set of benchmarks in FuBaz.

We will report the SLOC for implementing the benchmarks and the performance of the benchmarks.

Approach Outline – Example 1b

FuBaz is a new parallel programming model

- with some important features that
 - help solve the problem (state succinctly how they do that)
 - within the context the proposal is focusing on (tie it to the context)
- provide a small concrete example of how one of the features solves part of the problem

We will implement some benchmarks in FuBaz

- that are representative of applications within the context of interest (explain why)
- describe how existing benchmark implementations can or cannot be leveraged

To evaluate FuBaz in terms of programmability and performance

- We will use SLOC, programmer control, and tangling to evaluate programmability.
- We will select our input data sets for performance measurements using the following strategy (explain how the strategy is representative of context)
- We will compare the programmability and performance with hand-optimized implementations in programming model X, which is the most popular in the context. (How well known and tested are the hand-optimized versions?)

~~Approach Outline~~

~~Connection analysis is ...~~

~~We will implement connection analysis in OpenAnalysis.~~

~~Using UseOA-ROSE to connect OpenAnalysis to ROSE, we will analyze a number of C and C++ programs.~~

Approach Outline

Connection analysis is ... (provide a small concrete example)

We will implement connection analysis in OpenAnalysis

- using the ICFG data-flow framework (details, similar to existing managers?)
- whether we can or cannot use existing analysis results data structures (details)

Using UseOA-ROSE to connect OpenAnalysis to ROSE, we will analyze a number of C and C++ programs.

- We will create small programs that exercise/test various aspects of the analysis.
 - which aspects
 - which papers are a source of small examples relevant to connection analysis
- We will analyze the following benchmarks (b1.c, b2.cpp, etc.)

Evaluation

- We will record the reduction in possible locations each memory reference may access.
- We will time the analysis itself and plot the execution time wrt program size.