Research Methods in computer science
Spring 2024

Lecture 13

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Agenda

Conference and Journal Organization

Adequate Description of Research

HW6

Conferences are gatherings of scientists...

Why do we need them?

Activities in a Conference

Keynote

Paper presentations

Panels

Poster and demo

Competitions

Open mic sessions

Conference Organization

Different roles

General Chair

Finance Chair

Arrangement Chair

Technology Chair

Program Chair

Publication Chair

Technical Program Committee

Many other roles

Schedule for activities

Technical Program Committee

Review papers

Types of discussions and meetings

Journal Organization

Paper evaluation

    Editor in chief

    Associate editors

    Reviewers

Limited physical logistics requirement compared to a conference

We looked at the websites of some conferences and journals to understand how they are organized.

We also formed a conference organizing committee.

The Body of the paper

Depending on the area of work may describe the proposed algorithm, proofs, systems, implementations

[slide from a while ago...]

How much details?

Ideally: Enough for someone to replicate your system or idea

Practical consideration: 1-2 pages.

Illustrations

"One picture is worth a thousand words"

Architecture

Data flow

Try to have 1-2 diagrams describing your system

Code and Data Release

Becoming common in many areas of CS

Important tool for reproducible research

Code and data is not adequate.

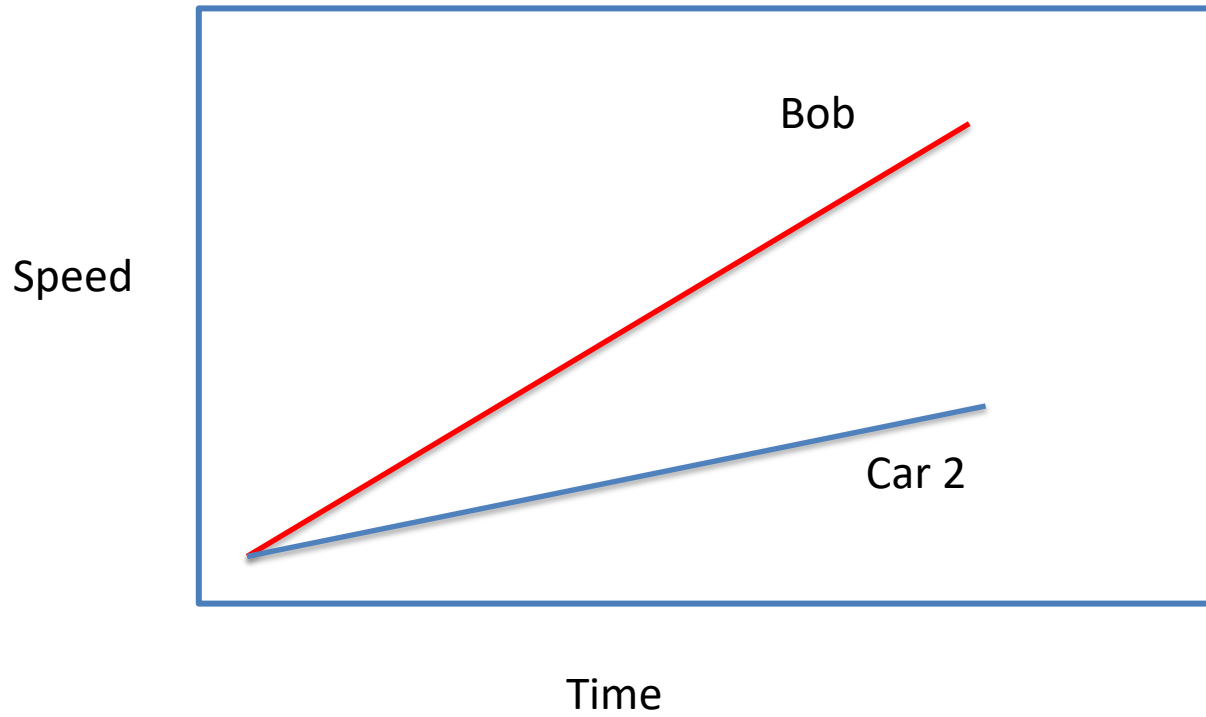Lots of code and data but impossible to understand artifacts

How much details should we use to describe experiments?

Same consideration as describing your system.

An example experiment

- Car1
  - Does not have telemetry
  - Have the driver (Bob) wear smart watch and use GPS on the smart watch to track Bob's speed
- Car2
  - Use built-in telemetry

Results

Consequences of inadequate clarity

An experiment writeup that can be interpreted as proving humans are faster than a car

Content in the following slides adopted from: https://mitcommlab.mit.edu/eecs/commkit/journal-article-methods-cs/

Criteria for Success

All the relevant details for producing your results

Convinces the reader of the correctness of your approach by providing justification for choosing your methodology

Provides readers the details, algorithms, and techniques necessary to confirm and/or replicate your findings

Purpose

Adequate details for others to replicate and enhance your work

Description of device, algorithm, model

Justification (important!)

Randomly decided 5 layers in your neural network??

Results and conclusions valid

Sometimes need to check the methods

Audience

Level of expertise

Generally assume advanced knowledge

Domain expertise

Generally assume experts in the field

If techniques from a different area,
common to provide background

Justification for an approach

Do not just say what your design is.

Why you are using a particular approach?

Why not some other approaches?

Organization

Sub-sections

Bullet points

Paragraphs

Diagrams

Cite methods when possible

"Minimal essential detail"

HW6

Related Work

The ten papers

Additional papers

Organizational elements