Paper Template for Mini-Project

Author-1, *Student Member, IEEE,* Author-2, *Senior Member, IEEE,* and Author-3, *Fellow, IEEE*

***Abstract*—A1: Describe your domain of problem statement A2: Explain your problem statement and its challenges.**

**A3: Describe your approach to solve the problem. A4: What is your performance or results ?**

**A5: Conclude.**

***Index Terms*—keyword-1, keyword-2, keyword-3, ...**

1. INTRODUCTION

**M**INI-PROJECT PAPER LAYOUT

P1: Intro on your domain of the problem statement.

P2: Motivation for your problem statement. P3: State-of-the-art solutions.

P4: Drawbacks of the state-of-the-art. P5: Challenges of the problem space.

P6: Explain your approach to solve the problem here. P7: Point-wise contributions of your paper,

P8: Organization of the rest of the paper.

1. LITERATURE SURVEY

**#ToDo:**

* You have to survey at least 20 papers.
* Papers should be from 2019-2023 years only.
* 80% of papers shall be journal and rest conference (IEEE, ACM, Springer, Elsevier, Taylor and Francis only).
* Collect bibtex entries of each paper and place them in paper.bib file.
* For each paper write 1 paragraph with following sen- tences.
  + Author Name (single, two and multiple rule)
  + Proposed Model/System
  + Performance
  + Advantage(s)
  + Disadvantage(s)
* Example: Pattar *et. al.*, [[1]](#_bookmark2) designed a progressive search algorithm for a Smart Airport IoT ecosystem. The al- gorithm maps the user’s requirements to the attributes of the IoT resources and smart services and thereby provide personalized search results. Further, they cate- gorize the user requirements into essential and optional requirements that are mapped to the intrinsic and extrinsic properties of the smart services. Using these mapping two search schemes *viz.* Primitive Search Strategy and Elaborate Search Strategy are proposed that makes use of semantic and proximity measures to fine-tune the search results. Compared to previous works they have achieved a

Author-1 and Author-2 are with the Department of . (e-mail: author- [1@email.com,](mailto:1@email.com) author-2@email.com)

Author-3 is with . (e-mail:author-3@email.com)

precision result of 94% and recall of 96%. The advantage of this work is that the developed search system is highly scalable and consumes less time due to the use of signature-based semantic matching model. However, due to the use of ontological models it is time consuming process to define and model an IoT ecosystem. Also, for dynamic environments where there is no rigid relation- ships between the user requirements and IoT devices, it is difficult to provide such an ontological model.

* A table has to made (like Table [I.](#_bookmark0) In table, all 20 papers have to be listed with its parameters and compared.

1. PROBLEM STATEMENT AND BACKGROUND
2. *Problem Statement*
   * Describe your problem statement here with a scenario.
   * If possible build a mathematical model for your problem statement.
3. *Objectives*
   * List the objectives of your project here.
   * Every objective should have a title and a short description.
4. *Assumptions*
   * List the assumptions that you have made to implement the project.
5. *Background*
   * Describe the background/fundamentals of your project domain here. It can include basic definitions, equations, concepts, *etc*.
6. SYSTEM MODEL/ARCHITECTURE
   * Explain your proposed system model here.
   * You can have subsections for each module.
   * Draw and describe the system using UML notations.
   * Use tools like StarUML, Diagrams.net, PlantUML, Pa- pyrus, *etc*.
   * Make use of flowcharts or algorithm (sample algo. is given in Algorithm [1)](#_bookmark1) to describe the flow of your solution.
   * Make judicial use of the different software engineering design approaches.

TABLE I

EVALUATION OF REVIEWED RESEARCH PUBLICATIONS FOR TECHNIQUE.

**Author Year Approach 1 2 3 4 5**

1. parameter-1 2. parameter-2 3. parameter-3 4. parameter-4 5. parameter-5

**Algorithm 1** Algorithm for ...

**Input:** get data

**Output:** return results

*Initialisation* : 1: first statement *LOOP Process*

2: **for** *i* = *l* 2 to 0 **do**

*−*

3: statements..

4: **if** (*i* 0) **then**

5: statement..

6: **end if**

7: **end for**

8: **return** *P*

REFERENCES

[1] S. Pattar, S. K. Dwaraka, V. Darshill, R. Buyya, K. R. Venugopal, S. S. Iyengar, and L. M. Patnaik, “Progressive Search Algorithm for Service Discovery in an IoT Ecosystem,” *in Proceedings of the 2019 International Conference on Internet of Things (iThings) and IEEE Green Computing and Communications (GreenCom) and IEEE Cyber, Physical and Social Computing (CPSCom) and IEEE Smart Data (SmartData), Atlanta, USA*, pp. 1041–1048, 2019.

APPENDIX A

Appendix A goes here ...

APPENDIX B

Appendix B goes here ...

1. IMPLEMENTATIONS AND PERFORMANCE ANALYSIS
2. *Experimental Setup*
   * In detail explain your project implementation.
   * Describe the programming language, its libraries/packages you have used.
   * Give the specifications of the machine on which the experiments are performed.
   * Have you assumed somethings? Describe them.
   * Did you setup some parameters for experiments? Like network topology, ML hyperparameters, *etc.*, describe them here.
3. *Results*
   * List the experiments you have performed.
   * At least 5 experiments based on your objectives shall be done.
   * Each experiment will go into separate subsection.
   * For each experiment, draw graphs or tabulate results and analyze.
   * Make use of tikZ package in LATEXto draw graphs.
4. CONCLUSIONS

C1: What was your problem statement? C2: How did you solve it?

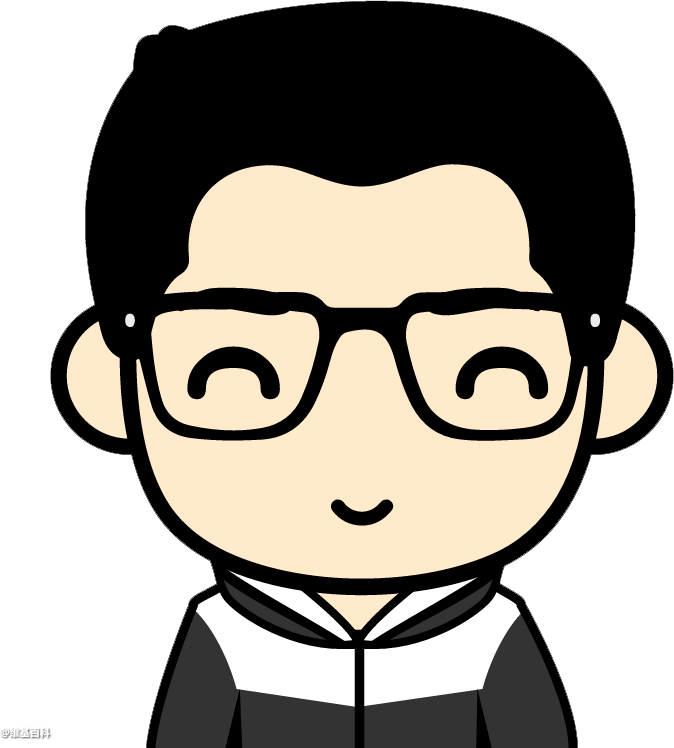
C3: What results you got?

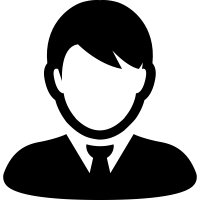
C4: How is your solution/approach better than the SOTA? C5: Future directions.

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**Author-1** received the Bachelor of Engineering de- gree in computer science from ... in ... and the Masters of Engineering degree from the ... in ... He is currently pursuing the Ph.D. degree in computer science with ... His current research interests include

... He is a student member of the IEEE.

**Author-2** is Professor of Computer Science and Software Engineering at the ... He is a Senior Member of IEEE.

**Author-3** ... He is a Fellow of IEEE.

