Projects

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Categorization Page URL

	Title	Student Names	Student Names NetId	Deep Paper Categorization Page	Paper List (HW4)
0	Improving Automatic Test Generation for Python	XXX, YYY	AAA, BBB	Categorization Page URL	
1	Security Testing with Verification Techniques	Siwakorn Srisakaokul, Wing Lam S.S., W.L.	srisaka2, winglam2	Categorization Page URL	Paper List
2	Test Data Generation for Excel VBA (Visual Basic for Applications)	Kim Phan, Isra Sunhachawi K.P., I.S.	kimphan2, sunhach2	Categorization Page URL	Paper List
3	Dynamic Symbolic Execution in Python	Dengfeng(Davis) Li, Wesley Brooks D.L., W.B.	dli46, wabrook2	Categorization Page URL	Paper List
4	Detect SQL/No-SQL Injection Vulnerability Based on String Solver	Xiupeng Ma, Xianli Ren, Ruichao Qiu X.M., X.R., R.Q.	xma33, xren11, rqiu3	Categorization Page URL	Paper List
5	Test Data Generation for MapReduce	Jungchen Chen, Jiaqi Liu J.C., J.L.	jchen186, liu269	Categorization Page URL	Paper List
6	Automated Resource Management for Cloud Computing	Michael O'Sullivan, Jonathan Mark M.O., J.M.	osulliva, jbmark2	Categorization Page URL	Paper List
7	Distributed Constraint Solving	Mohana Subramanian, Suma Vangala M.S., S.V.	msbrmnn2, svangal2	Categorization Paper URL	Paper List
8	Symbolic Execution - Code-Test Results Snapshot plugin	Manish Pandey, Abhishek Harish M.P., A.H.	mpandey2, harish2	Categorization Page URL	Paper List
9	Satisfiability of association rules generated using probabilistic models	Siddharth Atreya, Rohit Tiwari S.A., R.T.	atreya2, rtiwari2	Deep Paper Categorization	Paper List

10	Improving AutoFix-E With Improved Behavioral Models	Bob King, Adam Davids, Nicholas Lu B.K., A.D., N.L.	rwking2, adavids2, ndlu2	Deep Categorization URL	Paper List
11	Automatic K specification generator for K Verifier	Shijiao Yuwen, He Xiao S.Y., H.X.	yuwen2, hexiao2	Categorization Page URL	Paper List
12	Infer Likely Loop Invariants for input-dependant loops via Dynamic Symbolic Execution	Angello Astorga, Chiao Hsieh A.A., C.H.	aastorg2, chsieh16	Categorization Page URL	Paper List
13	Z3 on Arduino IDE and applied to Arduino distributed system	Joe Gonzalez J.G.	gonzale5	Categorization Page URL	Paper List
14	Detecting Flaky Behaviour in Tests due to Non-deterministic Functions	Wajih Ul Hassan, Xinyue Xu W.H., X.X.	whassan3, xxu52	Categorization Page URL	Paper List
15	Infeasible code detection and reasoning with Z3 for Joogie	Minhao Zhan, Weijie Huo M.Z., W.H.	mzhan5, whuo3	Categorization Page URL	Paper List
16	Advanced Scheduling Optimization for Project Management and More	Yufei Chen, Yaojie Feng, Zhujia Liu Y.C., Y.F., Z.L.	ychen131, yfeng10, zliu32	Categorization Page URL	Paper List
17	Visualizing Symbolic Execution Test Data Generation in Python	Chi Zhou, Zhongyuan Xie C.Z., Z.X.	chizhou3, zxie5	Categorization Page URL	Paper List
18	Human driven programming language distributed design and testing	RItwika Ghosh R.G.	rghosh9	Categorization Page URL	Paper List

Project Requirements

Your project must use Z3 and is strongly encouraged to be developed upon an existing open source project/tool, instead of developing from the scratch.

Project Final Report Guidelines

Please use the IEEE Format described here to format your final report. To follow the format, if you are an MS Word user, please download the Word template there and fill in your report content; if you are a LaTeX user, please download the LaTeX class file there and follow the instructions there.

Your report's length cannot exceed 11 pages for all text, figures, and references. You may add any number of pages for appendices beyond these 11 pages but these appendices won't be reviewed or graded (so there is not much point in attaching appendices).

Your report must be in PDF format.

Please include your report (report.pdf) in SVN, before the stated deadline **December 11 Friday 06:59am (US**

Central Time).

There are no specific content requirements on the final project report because different types of projects may call for different structures/styles of the final project reports. A good rule of thumb is to emulate the styles/structures of related papers published by others falling into the same project type (e.g., empirical study vs. new tool). In addition, it is a good idea to avoid Common Technical Writing Issues (slides) and if your project is of type contributing some new tool features or new tool, the slides on writing research papers would be useful. More collections of technical writing can be found here.

Project Progress Report Guidelines

When you prepare your project progress report, don't edit your project proposal wiki page that you created earlier. Instead, you should create a new wiki sub-page under this wiki page, and make a link to this wiki sub-page under the column of "progress" in your project's row of the table below.

When preparing your progress report, copy your earlier project proposal text over to your new wiki sub-page as the starting point for your progress report. Revise and expand the contents there to incorporate the outcomes of your project progress made beyond the timing of the proposal submission. Besides the earlier sections in your project proposal, you need to have the following new sections:

- A new section on "**Study Setup**' to describe the tools under study and the open source projects under analysis along with your criteria and process for selecting these tools/projects, and other setup details such as research questions and corresponding metrics, configuration details of tools.
- A new section on "**Preliminary Results**" to describe the preliminary results that you attain at the time of the submission of the progress report.
- A new section on "**Plan Changes**" to describe your changes on your plan stated in your project proposal (if you don't have any changes on your plan, simply state "None" as this new section's content).

Such progress report will give opportunities for the instructor and TA to identify potential risks or weaknesses in your project development before you finish and submit your project report in the end of this semester (at that time, it would be too late for you to fix things!).

Project FAQs

General Information about Projects

You should feel free to use Piazza to discuss potential projects, advertise your ideas, form teams, etc. We will eventually list here all the projects and the teams or individual students working on them, hence the page is not publicly visible.

We can discuss specific topics based on your interests. Here are some examples, but they definitely do not include all possibilities. You may want to automate some testing that you're doing manually. You may want to speed up regression testing for some system. You may want to build a model of some complex piece of software and check that model. You may want to evaluate (and improve) the quality of your tests (as opposed to the quality of your code).

Here is a list of available research tools (most of which are open source tools) maintained by Tao Xie. You may improve/adapt some of these tools for new research ideas or apply some of these tools on some open source projects. If you know some available tools that are missing from the list, please contact Tao Xie with such tools.

Here is the Software Engineering Bibliography organized by topics maintained by Tao Xie and his research group. You may browse around these topics and related papers to think about project topics.

Project-Team Size: By default, a team's size is 2 students. However, when a student presents strong justifications for having an individual project, the instructor may approve such a project. An example strong justification would be that the chosen project requires specific background and skills, which no other student in the class has. The student who requests an individual project should also demonstrate to the instructor his/her effort for seeking a project partner. In other words, no n-student team is allowed when (n != 1) and (n != 2). You are welcome to use Piazza to seek project partners besides individual emails or in/after-class in-person meetings. Please populate the people wiki when you decide on a project partner (please also use the people wiki to see who is still available).

Papers Based on Previous Projects

Categorization Page URL

No labels