Independent Study Proposal

Title of the Independent Study

*Student name*

*[Current Date]*

Semester: [e.g. fall 2019],

Number of Units: [enter a number between 1 and 12]

Course type: [full-semester or mini]

Independent Study Faculty Advisor

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

INI Academic Advisor

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Overview and Justification

This document provides the template for an INI student to use when submitting an independent study proposal. We will include examples in the template to help the student get started. Students should always refer to the INI handbook [1] to check for further guidance when submitting an independent study proposal.

In this section for the overview and justification of the work, explain why an independent study on this chosen topic or project is relevant to your degree program and should be allowed (we recommend no longer than a page for this section). We encourage you to be creative and to deeply think about your chosen topic or project. Always remember to include citations for definitions and related work; for example, using IEEE format. There are MS word Plug-ins that make managing and inserting citations easy; Zotero (free, open source) [2], and Mendeley (proprietary, CMU license) [3] are two popular examples of plug-ins.

The first line in the section should be your problem statement:

*This 6-unit independent study will [include a short statement that summarizes what this independent study is about and what it is planning to achieve].*

To help you get started with this section, use the following list of recommended content:

* Brief introduction to the problem
* The global impact of this problem (*e.g. it will enhance IoT technology, advance the field by highlighting security or privacy concerns, provide developers with guidelines, show a demonstration of a possible solution, etc.*)
* Summary of other approaches that are available and how the approach in this study is new, unique, or adds value
* What do you bring to this study? What skills do you possess that make you a good candidate to work on this project? (*e.g. I have taken a reverse engineering course and I will apply my skills to reverse engineer application X to investigate Y*)
* If your study includes research question(s), then list those questions and explain how you plan to address them
* Explain what you will gain from the study, (*e.g. by completing this study, I will obtain the opportunity to have hands-on experience in applying what I have learned in X to problem Y*)

# Faculty Advisor Justification

This section should include the name of the faculty advisor, their interest in the project, and why they are an appropriate independent study advisor.

*e.g. Dr. Barbara Gordon Ph.D. [4] is currently the faculty advisor for the research team working in Project X. She is knowledgeable and enthusiastic about the project, and she is willing to provide guidance for this independent study. Dr. Gordon’s research interest in hacking systems [4] fits well with my interests for this independent study. …..*

*[optional] In addition to Dr. Gordon, I will be working closely with Dr. Tony Stark, a post-doctoral researcher in Dr. Gordon’s lab. Dr. Stark will be overseeing the day-to-day progress of my work.*

# Learning Objectives

Learning objectives are different for each project. Discuss the learning objectives with your project advisor. The list provided below is an example of possible objectives.

* *Conduct a literature review*
* *Understand human research protocols and ethics*
* *Design a data collection mechanism to answer this research question*
* *Write selected sections of a research paper, including related works, methodology, and analysis*
* *Apply hands-on experience by configuring servers and debugging code*
* *Use background knowledge in X to work on challenges in problem Y*
* *Use background knowledge and theories learned in class to apply to a hands-on application*

# Milestones

With your project advisor, define a timeline with appropriate milestones. Milestones can be weekly or bi-weekly. These milestones are to be reviewed and discussed with your independent study advisor prior to submitting the INI petition. The following table is an example.

|  |  |
| --- | --- |
| **Week 1** | * Complete a literature review * Design tool X |
| **Weeks 2** | * Review design and deploy the tool for testing |
| **Weeks 3-4** | ………. |
| **Weeks ….** | ……. |

# Deliverables

* Final report signed by project advisor
* Artifacts, examples include:
  + User study materials (surveys, interview scripts, etc.)
  + Software tool available on GitHub
  + Dataset available on CMU data repository [5].
  + Final presentation to the research team, and/or through an INI research seminar

# Location and Project Meetings

Describe the location and frequency of meetings. If there are remote meetings involved, please include that information.

# References

[1] “INI Student Handbook - Information Networking Institute - College of Engineering - Carnegie Mellon University.” [Online]. Available: https://www.cmu.edu/ini/student-services/enrollment/handbook.html. [Accessed: 06-Dec-2019].

[2] “Zotero | Your personal research assistant.” [Online]. Available: https://www.zotero.org/. [Accessed: 06-Dec-2019].

[3] “Mendeley | Carnegie Mellon University Libraries.” [Online]. Available: https://www.library.cmu.edu/research/tools/mendeley. [Accessed: 06-Dec-2019].

[4] “Barbara Gordon,” *Batman Wiki*. [Online]. Available: https://batman.fandom.com/wiki/Barbara\_Gordon. [Accessed: 06-Dec-2019].

[5] “Carnegie Mellon University data repository.” [Online]. Available: https://kilthub.cmu.edu/. [Accessed: 06-Dec-2019].