

## Project, ECE 590 & CS320 Towards More Reliable Software

In this project, you need to find a well-publicized incident, research it, and write a research report.

- You are welcome to find an incident on your own, but please make sure the incident is caused by defective software systems and there is enough public information for you to analyze. We also provide some examples you can choose from.
- You need to incorporate course materials in the report. For example, you may include the chain of fault, error, failure in the cause analysis. You can also use information from other resources as long as you cite them appropriately.
- You should also provide a potential solution to the problem that caused the incident, possibly using ideas from the course – fault removal, fault tolerance etc.
- Your submission should be 3~6 pages (A4 or US letter, font size 12pt) to allow you to include enough information, and the below grading rubric includes the contents we expect you to cover.
- This is an individual assignment. You may discuss general concepts with others, but all your work needs to be on your own.

Example incidents:

1. Ariane 5 incident: <https://www.bugsnap.com/blog/bug-day-ariane-5-disaster>
2. Boeing 737 MAX incident: <https://www.boeing.com/737-max-updates/>
3. Mars Climate Orbiter: [https://en.wikipedia.org/wiki/Mars\\_Climate\\_Orbiter](https://en.wikipedia.org/wiki/Mars_Climate_Orbiter)
4. Patriot Missile Accident: <https://www-users.cse.umn.edu/~arnold/disasters/GAO-IMTEC-92-96.pdf>
5. Knight's \$440 Million Error: <https://www.henricodolfing.com/2019/06/project-failure-case-study-knight-capital.html>

<b><u>Grading rubric</u></b>
<b>Content (85%):</b>
Introduction and background (10%)
Cause analysis of the incident (30%)
How it was solved*, how to avoid/reduce such incidents in the future (30%)
Conclusion (7%)
Extra research/information not listed above (8%)
<b>Delivery (15%):</b>

\* If the incident was solved

Grammar, structure, and flow (10%)
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Appropriate citations (5%)
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