

600.446/646 – CIS II – Mentors Report

Dear CIS II Mentor,

First, thank you for mentoring a CIS II project this year. This course provides a great educational experience for the students, and also can produce useful research results. Its success depends greatly on the project mentors, and I hope that your experience this year has been productive both for you and for the students.

As part of our grading process this year, I am encouraging project mentors to provide some input. You all should have been granted access to the course web site and to the individual project(s) that you are mentoring. Go to

<https://ciis.lcsr.jhu.edu/doku.php?id=courses:456:2022:projects>

You will be asked to log in by clicking the login link in the upper right. You can then follow the link to your specific project. Contact either me (rht@jhu.edu) or the TA (Juan Antonio Barragan, jbarrag3@jh.edu) if you have problems.

We would really appreciate it if you can answer a few questions. Please, edit the form and send it back to your students, so that they can upload it onto the course web site for us to revise. If you have any additional private comments that you would like to share with us you can send them directly via email to me and Juan with the subject "cis ii project xxx additional feedback".

Finally, note that the annual final exam / poster session will be Thursday, May 11 from 9 AM until about 12:30 PM. This year, the event will be held in person on Hackerman B17. I very much hope that you can attend. Also, the project reports are due on the day of the poster session, but the students have been told that you need an opportunity to review the reports before then. Also, **we will need your comments to us on May 11 before 9AM**, since we will be using them to help us with our evaluation of the projects.

Russ Taylor

PS: An electronic copy of this word file may be found on the CIS 2 Wiki page at

<https://ciis.lcsr.jhu.edu/dokuwiki/doku.php?id=courses:446>

Our contact information is below:

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Questionnaire – Project #1

Mentor: Ugur Tumerdem

Overall project and progress

- Were you satisfied with the overall technical progress made in the course of the semester?

I was very satisfied with the technical progress over the course of the semester. Brevin Banks dedicated himself to the project, spent a lot of time on it and completed the most critical expected deliverables of the project although he was the only project member. Given the limited time he was working on this project and other technical difficulties we faced, I believe he got very good results.

- Was the total accomplishment appropriate for the number and level (undergrad/graduate) of students on the project?

The total accomplishment is more than expected for a single project member. It really did help that Brevin had a good understanding of control theory and robotics as well as experience in designing control systems as a master's student.

- Will the results be useful to you in the future?

I believe the results would be useful in the future. The developed control framework has already been implemented on the Galen Surgical system with success albeit in a single degree of freedom. We believe that the framework that we established could be a powerful alternative to the existing control system to overcome instabilities while retaining high transparency.

- Is this a project that you would like to continue? If so, is it left in a state to facilitate this?

Yes, I would like to continue this project. I believe that it is left in a state to facilitate this. The developed controller can be extended to all the axes, and extensive experiments can be performed with different tuning parameters and user studies can be conducted to compare this framework with the existing controller. Brevin is willing to continue working on the project until June, but we would be interested in continuing from where he is left.

- Do you see a prospect for patents or publication to result?

I see the potential of having several publications out of this work when the experimental work is completed.

Work products

- Is the **project documentation** adequate?

The project documentation is very detailed and satisfactory.

- If the project involves source code, is the code well-structured and usable by others?

The project involves source code, it is very well structured and commented. It can be easily used by others.

- **Important:** Are the project documentation, programs, and data preserved in a place readily accessible and identified in the project Wiki pages?

Yes all the non-confidential documentation is shared on CIS website.

Report (which the students should have shared with you)

- Does the project report accurately reflect the scope and accomplishment of the project?

Yes the project report sufficiently reflects the scope and accomplishments of the project.

- Were you given an adequate opportunity to review the report?

I was given adequate time to review the report.

- Does the report and its appendices, together with the web site, provide sufficient information that subsequent groups can make effective use of the project results?

Yes, it does.

- Does the report include clear links to project documentation, programs, and data?

Yes, it does.

Web site

- Does the web site reflect the scope and accomplishment of the project?

Yes, it does.

- Do you wish the web site to remain password protected after May 30? If so, for how long?

Yes, I would like it to be password protected until we have a publication from this project.

Management

- Were the students fully engaged in the project?

Yes Brevin was fully committed to the project.

- How often did they meet with you? Was this enough?

I met with Brevin regularly once a week, but towards the end of the semester, Brevin also met with other mentors in the project at least 2-3 times a week. He also asked us questions regularly via e-mail. Our communication was more than enough.

- Were the “deliverables” and “dependencies” realistic?

The dependencies were realistic, but the deliverables were planned with at least 2 students in mind. Therefore, it wasn't expected that a single student would be able to complete all the deliverables. At the start of the semester we didn't have access to the low level Galen controllers, so we knew that performing user studies would not be realistic in a single semester.

- Was the plan realistic? Were unmet dependencies approached in an effective manner?

Yes, I believe the plan for expected deliverables was realistic but ambitious. There weren't any unmet dependencies.

Other comments or suggestions

- Do you have any other comments or suggestions, either about the specific project or about the overall structure of the course for next year.

I would be very happy if this project is continued by other students next year. It would be nice if the students could get course credits for their work if they want to continue on the project.