

**Position Error Estimation and Compensation of 3-DOF Delta Robot under the effect of Link Tolerances**

Weekly Report

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SECTION A

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**DEPARTMENT OF MECHATRONICS**

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**Week No. 1**

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| **Sl. No.** | **Date** | **Details of work carried out** | **Comments** |
| 1 | 13/10/21 | **Brief Introduction**  A brief introduction about delta robots and its application was delivered to us by our professor Dr Ankur Jaiswal.Its research prospects were discussed and the scope of research in this field was understood at the end of the session. |  |
| 2 | 14/10/21 | **Existing Solutions – An overview**  Before carrying out full fledged literature review our guide shows us existing mechanisms and work carried out in the field of delta robot research and development. |  |
| 3 | 15/10/21 | **Existing Solutions Review**  On an Individual basis we researched more on the topic and acquired information on what work has been done and the further scope of improvements by watching video clips online, |  |
| 4 | 16/10/21 | **Literature Review**  A literature review was performed on a set of research articles inorder to narrow down our research topic. On narrowing it , further read papers on link tolerances and position error estimation techniques. |  |
| 5 | 17/10/21 | **Literature Review**  Based on the literature reviews, we came up with the idea of compensating our errors using inverse kinematic approach so as to provide a fixed algorithm to minimize positional errors . |  |
| 6 | 18/10/21 | **Timeline**  A roadmap was created that included three main stages namely Detailed Literature Review, Mathematical Modelling of Direct Kinematics and Compensation of Errors. Simultaneously looking at the prospect of communicating our work in a Conference. |  |
| **Summary of the work done in the week:**  The first week was an introduction to the topic of Delta Robots, it majorly comprised of planning our way to go about the industrial training project as well reviewing literatures related to position error estimation, compensation of position errors as well as scavenging information on delta robots and its research propects. | | | |

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| **Challenges faced during the work:**  The tasks performed this week were relatively simple compared to the ones going to be performed in the subsequent weeks. However due to lack of familiarity with Delta robots and given the minimal amount of research done on it , finding quality literature ended up being a challenge . |
| **References:** |
| **Remarks:** |
| **Suggestions by the guide:** |
| **Signature of Student Signature of the guide** |