

#### **Homework-4: AAE-590 due 3/24/2025 by 11:59 PM**

35 points

For your low size dataset choose at least 5 (more the better but you don't lose point for only 5) images where stress is changing as a function of load. Perform two point correlation and plot. Do you see any trend? Discuss.

35 points

Perform PCA on your 2 point correlation plots. Plot first three components. Do you see a pattern as a function of load? Discuss.

30 points

Analyze and prepare a one page report for this paper with respect to your understanding using two point correlation with PCA for model development. Do you agree with their results? (the paper is also posted with lecture 14 on Brightspace)

<https://www.sciencedirect.com/science/article/abs/pii/S1359645419304367?via%3Dihub>

paper is available through Purdue libraries (when trying to download on web, just choose access through your institution option.)