

sandipan_dey >

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★ Course / Week 3: Matrix-Vector Operations / 3.4 Matrix-Vector Multiplication Algorithms

()

3.4.2 Via AXPY Operations

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Week 3 due Oct 18, 2023 06:12 IST

3.4.2 Via AXPY Operations





Video

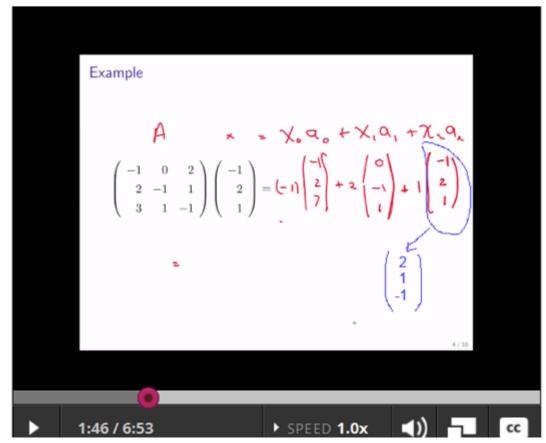
▲ Download video file

Transcripts

- <u>★ Download SubRip (.srt) file</u>

Errata: About 2 minutes into the tape, I make a mistake... See if you can find it!

Juan found it! (see image below)



Reading Assignment

0 points possible (ungraded) Read Unit 3.4.2 of the notes. [LINK]



Done



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✓ Correct

Discussion

Topic: Week 3 / 3.4.2

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**Hi, Where can I find the solution to the homework algorithm?

Homework 3.4.2.1

1/1 point (graded)
Implement the function

function [y_out] = Mvmult_n_unb_var2(A, x, y)

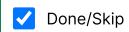
that corresponds to the algorithm

Algorithm: $y := \text{MVMULT_N_UNB_VAR2}(A, x, y)$ Partition $A \to \left(A_L \middle| A_R\right)$, $x \to \left(\frac{x_T}{x_B}\right)$ where A_L is $m \times 0$ and x_T is 0×1 while $m(x_T) < m(x)$ do

Repartition $\left(A_L \middle| A_R\right) \to \left(A_0 \middle| a_1 \middle| A_2\right)$, $\left(\frac{x_T}{x_B}\right) \to \left(\frac{x_0}{x_1}\right)$ where a_1 is a column $y := \chi_1 a_1 + y$ Continue with $\left(A_L \middle| A_R\right) \leftarrow \left(A_0 \middle| a_1 \middle| A_2\right)$, $\left(\frac{x_T}{x_B}\right) \leftarrow \left(\frac{x_0}{\chi_1}\right)$ endwhile

Some links that will come in handy:

- <u>Spark</u> (alternatively, open the file LAFF-2.0xM/Spark/index.html)
- <u>PictureFLAME</u> (alternatively, open the file LAFF-2.0xM/PictureFLAME/PictureFLAME.html)



⊞ Calculator



Answer:

• View a document that we put together that has most algorithms and MATLAB implementations that are homework problems in this week:

Week 3 algorithms and implementations.

This document is best viewed two pages, side by side, so that you can see the algorithm on the left and its implementation on the right.

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