

## DAILY ASSESSMENT FORMAT

Date:	13-07-2020	Name:	Rajeshwari Gadagi
Course:	coursera	USN:	4AL17EC076
Topic:	Mathematics for machine learning:Linear Algebra	Semester & Section:	6 <sup>th</sup> sem 'B' sec
Github Repository:	Rajeshwari-gadagi		

### FORENOON SESSION DETAILS

## Image of session

Mathematics for Machine Learning: Linear Algebra > Week 1 > Introduction: Solving data science challenges with mathematics

Home | Next

### Welcome to this course

- Video: Introduction: Solving data science challenges with mathematics 2 min
- Reading: About Imperial College & the team 5 min
- Reading: How to be successful in this course 5 min
- Reading: Grading policy 5 min
- Reading: Additional readings & helpful references 10 min
- Discussion Prompt: Nice to meet you! 15 min
- Complete our short pre-

### Introduction: Solving data science challenges with mathematics

Dr David Dye  
Professor of Metallurgy

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English

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### Notes

All notes

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Mathematics for Machine Learning: Linear Algebra > Week 1 > Doing some vector operations [Prev](#) | [Next](#)

Welcome to this course

The relationship between machine learning, linear algebra, and vectors and matrices

Vectors

- ✓ Video: Operations with vectors 11 min
- ✓ Practice Quiz: Doing some vector operations 7 questions

Summary

PRACTICE QUIZ • 30 MIN

## Doing some vector operations

✓ Submit your assignment [Try again](#)

✓ Receive grade

TO PASS 80% or higher

Grade 100% [View feedback](#)

We keep your highest score

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<https://www.coursera.org/learn/linear-algebra-machine-learning/lecture/Pd8NT/operations-with-vectors>

Mathematics for Machine Learning: Linear Algebra > Week 1 > Operations with vectors [Prev](#) | [Next](#)

Welcome to this course


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### Operations with vectors



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Notes [All notes](#)

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Machine learning is the latest in a long line of attempts to distill human knowledge and reasoning into a form that is suitable for constructing machines and engineering automated

systems. As machine learning becomes more ubiquitous and its software packages become easier to use, it is natural and desirable that the low-level technical details are abstracted away and hidden from the practitioner. However, this brings with it the danger that a practitioner becomes unaware of the design decisions and, hence, the limits of machine learning algorithms. The enthusiastic practitioner who is interested to learn more about the magic behind successful machine learning algorithms currently faces a daunting set of pre-requisite knowledge: Programming languages and data analysis tools Large-scale computation and the associated frameworks Mathematics and statistics and how machine learning builds on it At universities, introductory courses on machine learning tend to spend early parts of the course covering some of these pre-requisites. For historical reasons, courses in machine learning tend to be taught in the computer science department, where students are often trained in the first two areas of knowledge, but not so much in mathematics and statistics. Current machine learning textbooks primarily focus on machine learning algorithms and methodologies and assume that the reader is competent in mathematics and statistics. Therefore, these books only spend one or two chapters of background mathematics, either at the beginning of the book or as appendices. We have found many people who want to delve into the foundations of basic machine learning methods who struggle with the mathematical knowledge required to read a machine learning textbook. Having taught undergraduate and graduate courses at universities, we find that the gap between high school mathematics and the mathematics level required to read a standard machine learning textbook is too big for many people. This book brings the mathematical foundations of basic machine learning concepts to the fore and collects the information in a single place so that this skills gap is narrowed or even closed.

Linear algebra is a sub-field of mathematics concerned with vectors, matrices, and linear transforms. It is a key foundation to the field of machine learning, from notations used to describe the operation of algorithms to the implementation of algorithms in code. In this course on Linear Algebra we look at what linear algebra is and how it relates to vectors and matrices. Then we look through what vectors and matrices are and how to work with them, including the knotty problem of eigenvalues and eigenvectors, and how to use these to solve problems. Finally we look at how to use these to do fun things with datasets - like how to rotate images of faces and how to extract eigenvectors to look at how the Pagerank algorithm works.

Since we're aiming at data-driven applications, we'll be implementing some of these ideas in code, not just on pencil and paper. Towards the end of the course, you'll write code blocks and encounter Jupyter notebooks in Python, but don't worry, these will be quite short, focussed on the concepts, and will guide you through if you've not coded before. At the end of this course you will have an intuitive understanding of vectors and matrices that will help you bridge the gap into linear algebra problems, and how to apply these concepts to machine learning.

**Module-1**

1 a. With a neat diagram, explain the architecture of ARM cortex M3 microcontroller. (10 Marks)  
b. Explain the register organization of Cortex M3. (06 Marks)

**OR**

2 a. Explain the operation modes and privilege levels available in ARM cortex M3 with a neat transition diagram. (06 Marks)  
b. Mention the instructions used for accessing the special registers. Explain the same using suitable examples. (04 Marks)  
c. Explain the stack operations using Push and Pop instructions in ARM Cortex M3. (06 Marks)

**July 2018**

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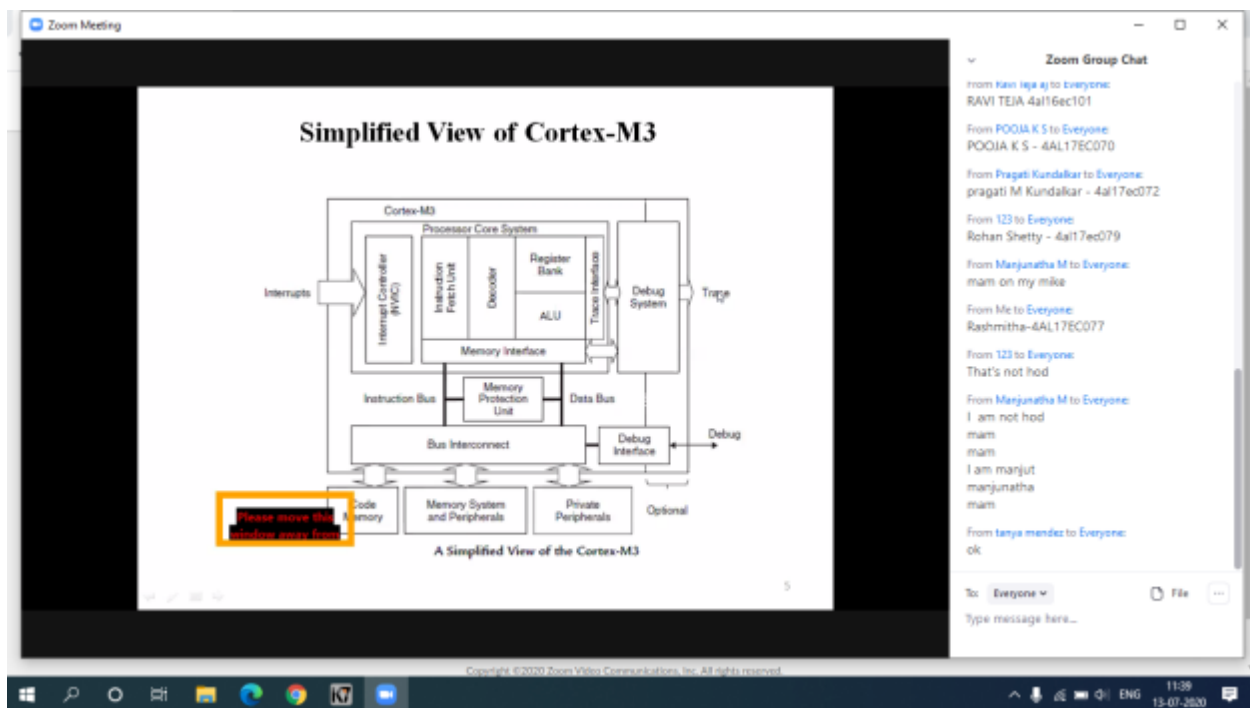
**Module-1**

1 a. Explain the architecture of ARM cortex – M3 processor with neat diagram. (08 Marks)  
b. With neat diagram, explain operation mode and privilege levels in cortex M3. (08 Marks)

**OR**

2 a. What is stack? Explain push and pop operation. With the help of a neat diagram. (07 Marks)  
b. Explain in detail special registers used in ARM cortex M3 processor. (09 Marks)

**July 2019**



Simplified view of cortex M3:

- Hardward architecture
- 32 bit architecture
- NVIC
- Memory protection unit

- R0-R12: general purpose register
- R13: stack pointer
- Program counter is used to hold the next instruction to be executed
- Special registers:
  1. program status registers
  2. interrupt mask registers
  3. control status register

#### Feature of NVIC:

1. Nested interrupt support
2. Vectored interrupt support
3. Dynamic priority changes support
4. Reduction of interrupt latency
5. Interrupt masking

#### Application :

1. Consumer product
2. Automotive parts
3. Real time system
4. Data communication
5. Industrial control

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<b>Github Repository:</b>	Rajeshwari-gadagi		

<b>AFTERNOON SESSION DETAILS</b>
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## image of session

You are viewing Ravi Mendir's screen. View Options ▾

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**July 2018**

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**July 2019**

Zoom Meeting controls: Stop Video, Start Video, Participants (52), Chat (11), Share Screen, Record, Leave.

Zoom Meeting

### Simplified View of Cortex-M3

A Simplified View of the Cortex-M3

5

Zoom Group Chat

- From Ravi Mendir to Everyone: RAVI TEJA 4a116ec101
- From POOJA K S to Everyone: POOJA K S - 4a117ec070
- From Pragati Kundalikar to Everyone: pragati M Kundalikar - 4a117ec072
- From 123 to Everyone: Rohan Shetty - 4a117ec079
- From Manjunatha M to Everyone: mam on my mike
- From Me to Everyone: Rashmitha-4A117EC077
- From 123 to Everyone: That's not hod
- From Manjunatha M to Everyone: I am not hod mam mam I am manjut manjunatha mam
- From tanya mendir to Everyone: ok

To: Everyone ▾ 📎 📎

Type message here...

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Windows taskbar: 11:39 13-07-2020



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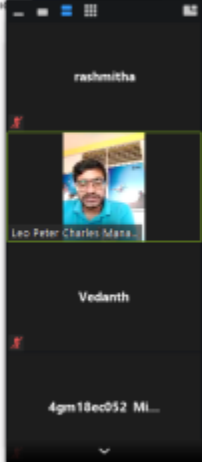

#### Application :

6. Consumer product
7. Automotive parts
8. Real time system
9. Data communication
10. Industrial control

## Webinar on "DRONE INDUSTRY INSIGHTS":

### DRONE APPLICATIONS

- DISASTER AND HAZMAT MONITORING.
- EMERGENCY DELIVERY ( MEDICINE, EQUIPMENT SUPPLIES).
- EMERGENCY RESPONSE COORDINATION.
- DISASTER RELIEF & POST DISASTER ASSESSMENT.
- SEARCH AND RESCUE.
- CRIME SCENE INVESTIGATION.
- CRIMINAL SURVEILLANCE AND TRACKING.
- POLICE RESPONSE COORDINATION.
- SECURITY SURVEILLANCE.
- CROWD CONTROL.
- CHEMICAL AND BIOLOGICAL MONITORING IN AGRICULTURE. ( IRRIGATION, PESTICIDES, TREATMENTS).
- FLOOD AND FIRE DETECTION MONITORING.
- INVENTORY AND RECORDS.
- PEST AND DISEASE DETECTION AND ITS TREATMENT.
- PRECISION AGRICULTURE OPERATIONS AND MANAGEMENT.
- ENVIRONMENTAL HAZARD ASSESSMENT.
- ENVIRONMENTAL IMPACT ASSESSMENT AND COMPLIANCE.



Zoom Meeting Interface showing participants: rashmitha, Leo Peter Charles Mana, Vedanth, and 4gm18ec052 Mi...

### DRONE COMPANIES IN INDIA



Logos of Drone Companies in India: AUS, DYNAMIC TECHNOLOGIES LIMITED, Asteria Aerospace, FLOTANOMERS, HELL INFRATECH, INDROON AERO SYSTEMS, NewSpace, Throttle Aerospace Systems Pvt Ltd, GarudaUAV, ideaForge



Zoom Meeting Interface showing participants: rashmitha, Leo Peter Charles Mana, Srinivas T B, and Thrishala M

