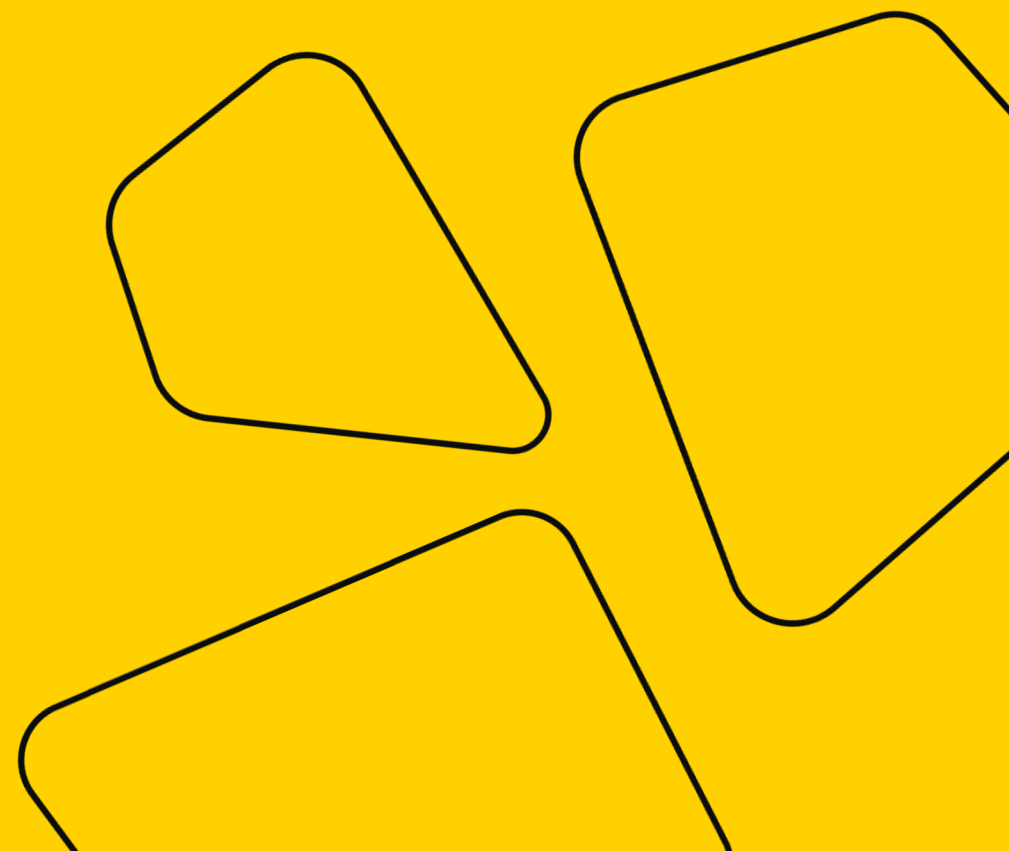



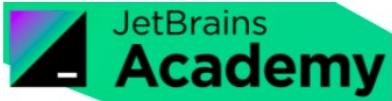


Math Refresher for DS

Introduction



About me

- Evgeniya Korneva
 - ✉ evgeniakorneva@gmail.com
 - in [evgeniyako](#)
- 🇷🇺 Moscow → 🇧🇪 Leuven → 📍 🇨🇪 Prague
- Sr. Data Scientist **MONSTER**
- Lecturer 
- Ex-head of DS Content 

Why do we care?

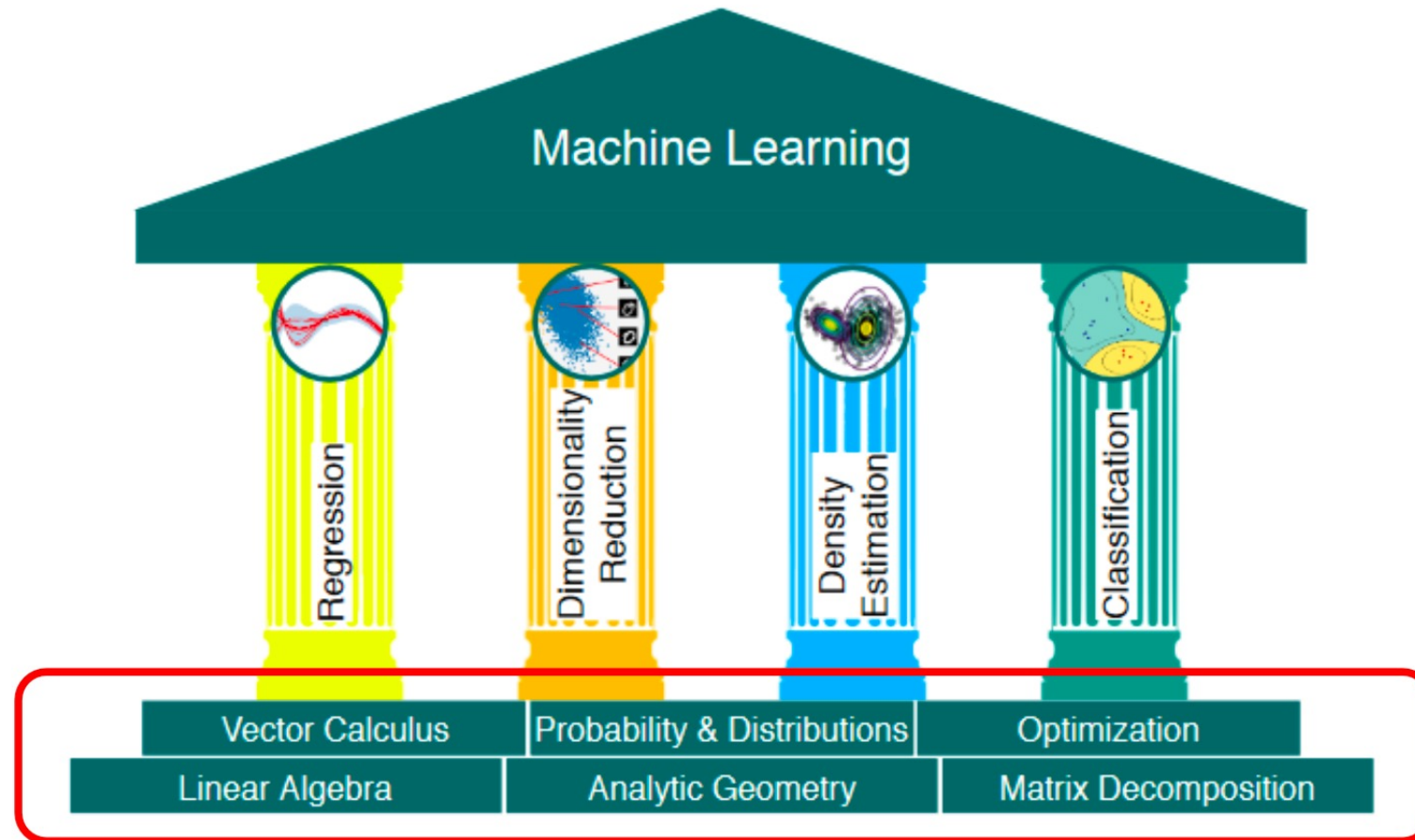


Image source: Mathematics for Machine Learning, p.14
(<https://mml-book.github.io/book/mml-book.pdf>)



In this course



We will review:

- Linear Algebra
- Calculus

Prerequisites:

- Some Python
- Basic Math
- *Latex*

Logistics



- Pre-recorded lectures
- Online practical sessions
 - *Wednesdays & Fridays*
19:00 Moscow time
1.5 hours
- ± 5 graded assignments
- Final grade:
 - *60% exam (30% Linear Algebra, 30% Calculus)*
 - *40% graded assignments*

You should use Latex for assignments

<http://overleaf.com> is a great online editor

The screenshot displays the Overleaf online LaTeX editor interface. The browser address bar shows the URL `overleaf.com/project/61bca2b68a183f70399d550c`. The document title is `msai21-latex-tutorial-exercise`. The left sidebar contains a file outline with sections: `main.tex`, `Text formatting`, `Lists` (with sub-items `Numbered` and `Bullet points`), and `Formulas`. The main editor area shows the LaTeX source code for `main.tex`, which includes document class, package loading, title, author, and content sections. The right sidebar shows the compiled PDF output, which includes the title, author, date, and the content sections: `Text formatting`, `Lists` (with sub-items `Numbered` and `Bullet points`), and `Formulas`. The PDF output shows the rendered text, including the title, author, date, and the content sections, with the formulas section displaying the dot product formula $v \cdot u \Leftrightarrow (u, v) = 0$ and the cosine formula $\cos \varphi = \frac{(u, v)}{\|u\| \cdot \|v\|}$.



Useful resources



 Course github: <https://github.com/girafe-ai/math-basics-for-ai>

Useful Resources

Linear Algebra

- (course) [Topics in Linear Algebra](#): lecture notes + quizzes.
- (Youtube playlist) [Linear Algebra for Engineers](#): a series of videos covering the most important concepts.
- (lecture notes) [Linear Algebra in 25 Lectures \(UC Davis\)](#)
- (book) [Introduction to Applied Linear Algebra](#)
- (book) [Deep Learning](#) - Part I

Calculus

- (Youtube playlist) [Essence of Calculus](#)
- (lecture notes) Introduction to Differential Calculus [[pdf](#)]
- (lecture notes) First Semester Calculus [[pdf](#)]

General

- (book) [Mathematics for Machine Learning](#)



- Please fill in a short questionnaire about your background
<https://forms.gle/3GXizMcK255fmRyj7>

