

Large Random Matrices Lectures On Macroscopic Asymptotics Cole D T De Probabilit S De Saint Flo

No keywords

This collection presents insightful lectures on the theory of large random matrices, focusing on their macroscopic asymptotics. Originating from the prestigious Saint-Flour Probability Summer School, these notes offer a comprehensive exploration of advanced topics in random matrix theory, crucial for researchers and students in probability and mathematical physics.

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Large Random Matrices Lectures On Macroscopic Asymptotics Cole D T De Probabilit S De Saint Flo

Alice Guionnet: Large deviations for the largest eigenvalue of random matrices - Alice Guionnet: Large deviations for the largest eigenvalue of random matrices by Centre International de Rencontres Mathématiques 1,491 views 4 years ago 43 minutes - Recording during the meeting "**Random Matrices**, and Random Graphs " the April 18, 2019 at the Centre International **de**, ...

Dimitri Shlyakhtenko: Free probability of type B and asymptotics of finite-rank perturbations ... -

Dimitri Shlyakhtenko: Free probability of type B and asymptotics of finite-rank perturbations ... by Centre International de Rencontres Mathématiques 334 views 8 years ago 48 minutes - We show that finite rank perturbations **of**, certain **random matrices**, fit in the framework **of**, infinitesimal (type B) **asymptotic**, freeness.

Intro

Witness Witness Theorem

Are Transforms

Free Convolution

Infinitesimal Probability Space

Type A and Type B

Free independence

Example

Summary

Histogram

Freeness

IMS Medallion Lecture: "Non-asymptotic Random Matrix Theory" Ramon van Handel - IMS Medallion Lecture: "Non-asymptotic Random Matrix Theory" Ramon van Handel by Institute of Mathematical Statistics 307 views 1 year ago 1 hour, 13 minutes - IMS Medallion **Lecture**,: "Non-**asymptotic Random Matrix**, Theory" Ramon van Handel March 17, 2022 Seminar on Stochastic ...

Ramon Van Gaal

Awards and Recognition

What Is Classical Random Theory

Non-Synthetic Randomization

The Non-Communication Inequality

Variance Matrix

Universal Constant

The Spike Covariance

Central Limit Theorem

Sample Covariance

Sample Covariance Matrix

Complex ODEs: Asymptotics, Orthogonal Polynomials and Random Matrices - 17 May 2018 -

Complex ODEs: Asymptotics, Orthogonal Polynomials and Random Matrices - 17 May 2018 by SNS

Sciences 258 views 5 years ago 5 hours, 12 minutes - Centro di Ricerca Matematica Ennio De Giorgi

<http://crm.sns.it/event/429/> Complex ODEs: **Asymptotics**, Orthogonal Polynomials ...

Mattia Cafasso

Coffee break

Alexander Aptekev

Lunch break

Nicholas Witte

Marco Chiani

Coffee break

Maciej Nowak

OLS Asymptotics - Hypothesis Testing - OLS Asymptotics - Hypothesis Testing by Michael Barber

410 views 2 weeks ago 13 minutes, 27 seconds - Now let's talk about acid uh **asymptotic**, normality and hypothesis testing **asymptotic**, normality. And hypothesis uh testing so that ...

Asymptotics of Moments in Random Matrix Theory - Alice Guionnet - Asymptotics of Moments in Random Matrix Theory - Alice Guionnet by Institute for Advanced Study 39,727 views 7 years ago 58 minutes - Alice Guionnet MIT May 13, 2014 **Asymptotics of**, Moments in **Random Matrix**, Theory

For more videos, visit <http://video.ias.edu>.

Intro

Question

Microscopic properties

Vignale theorem

Vignale theorem

Estimating Moment

Signal Theorem

Semicircular Law

Collections

Exploration Pass

Spectral Formula

5.1 Bitstrings [Lecture 5 - Applications of Rational and Meromorphic Asymptotics] - 5.1 Bitstrings

[Lecture 5 - Applications of Rational and Meromorphic Asymptotics] by Graduate Mathematics 347

views 8 years ago 16 minutes - Lecture, 5: Applications **of**, Rational and Meromorphic **Asymptotics**,.

We consider applications **of**, the general transfer theorem **of**, the ...

Example I: Bitstrings with restrictions on consecutive Os

Example 1: Bitstrings with restrictions on consecutive Os

Constructions for strings without specified patterns

Constructions for bitstrings without specified patterns

The Spectrum of Nonlinear Random Matrices for Ultra-Wide Neural Networks - The Spectrum of Nonlinear Random Matrices for Ultra-Wide Neural Networks by Simons Institute 633 views Streamed 2 years ago 19 minutes - Yizhe Zhu (University **of**, California, Irvine) ...

Intro

Fully-connected two-layer neural network

Two kernel matrices

Semicircle law for sample covariance matrices

Assumptions

Deformed semicircle law

Simulations for Gaussian data

Ingredients in the proof

Non-asymptotic bound

Random feature regression

Linear Algebra - Full College Course - Linear Algebra - Full College Course by freeCodeCamp.org
 1,936,979 views 3 years ago 11 hours, 39 minutes - [Course Contents](#) [\(0:00:00\)](#) Introduction to
 Linear Algebra by Hefferon [\(\(0:04:35\)](#) One.I.1 Solving Linear ...
 Introduction to Linear Algebra by Hefferon
 One.I.1 Solving Linear Systems, Part One
 One.I.1 Solving Linear Systems, Part Two
 One.I.2 Describing Solution Sets, Part One
 One.I.2 Describing Solution Sets, Part Two
 One.I.3 General = Particular + Homogeneous
 One.II.1 Vectors in Space
 One.II.2 Vector Length and Angle Measure
 One.III.1 Gauss-Jordan Elimination
 One.III.2 The Linear Combination Lemma
 Two.I.1 Vector Spaces, Part One
 Two.I.1 Vector Spaces, Part Two
 Two.I.2 Subspaces, Part One
 Two.I.2 Subspaces, Part Two
 Two.II.1 Linear Independence, Part One
 Two.II.1 Linear Independence, Part Two
 Two.III.1 Basis, Part One
 Two.III.1 Basis, Part Two
 Two.III.2 Dimension
 Two.III.3 Vector Spaces and Linear Systems
 Three.I.1 Isomorphism, Part One
 Three.I.1 Isomorphism, Part Two
 Three.I.2 Dimension Characterizes Isomorphism
 Three.II.1 Homomorphism, Part One
 Three.II.1 Homomorphism, Part Two
 Three.II.2 Range Space and Null Space, Part One
 Three.II.2 Range Space and Null Space, Part Two.
 Three.II Extra Transformations of the Plane
 Three.III.1 Representing Linear Maps, Part One.
 Three.III.1 Representing Linear Maps, Part Two
 Three.III.2 Any Matrix Represents a Linear Map
 Three.IV.1 Sums and Scalar Products of Matrices
 Three.IV.2 Matrix Multiplication, Part One
 Advanced Algorithms (COMPSCI 224), Lecture 1 - Advanced Algorithms (COMPSCI 224), Lecture
 1 by Harvard University 17,325,841 views 7 years ago 1 hour, 28 minutes - Logistics, course topics,
 word RAM, predecessor, van Emde Boas, y-fast tries. Please see Problem 1 **of**, Assignment 1 at ...
 Gilbert Strang: Linear Algebra vs Calculus - Gilbert Strang: Linear Algebra vs Calculus by Lex Fridman
 364,013 views 4 years ago 2 minutes, 14 seconds - For now, new full episodes are released once or
 twice **a**, week and 1-2 new clips or **a**, new non-podcast video is released on all ...
 Martingale theory I - Martingale theory I by Max Planck Science 12,873 views 3 years ago
 1 hour, 30 minutes - Martingale theory I: <https://youtu.be/zYjiBSe3c8g> Martingale theory II:
<https://youtu.be/DGJKsBeoncl> Martingale theory III: ...
 Conditional Probability
 Discrete Distribution
 Probability Density
 Proof
 Examples
 Conditional Expectation of Y with Respect to X
 Properties of Conditional Expectations
 Property 4 Is the Linearity of the Conditional Expectation
 Expectation Proof
 Conditional Expectation
 Monotone Convergence Theorem
 Tower Property
 Case 2
 Hilbert Space of G Measurable Functions Theorem

MAT 1100 2023 EXAM QUESTION ONE SOLUTION - MAT 1100 2023 EXAM QUESTION ONE SOLUTION by DR. Possibility 1,231 views 2 months ago 57 minutes - REGISTER WITH US BY CONTACTING 0965887474 OR 0974840616 OR 0779943743.

Gilbert Strang: Linear Algebra, Teaching, and MIT OpenCourseWare | Lex Fridman Podcast #52 - Gilbert Strang: Linear Algebra, Teaching, and MIT OpenCourseWare | Lex Fridman Podcast #52 by Lex Fridman 295,815 views 4 years ago 49 minutes - Linear algebra **is a big**, part not all the part people were leaning on **matrices**, that's good still do linear is something special.

Equivariant Machine Learning Structured Like Classical Physics - Equivariant Machine Learning Structured Like Classical Physics by Simons Institute 1,375 views Streamed 2 years ago 58 minutes - Soledad Villar (Johns Hopkins) <https://simons.berkeley.edu/talks/equivariant-machine-learning-structured-classical-physics> ...

Introduction

Motivation

Graph Neural Networks

Recap

Invariant

Spectral Methods

Community Detection

Graph Neural Networks Expressivity

Equivariant Machine Learning

Output

Fundamental Theorem

Translation equivalence

General groups

Numerical examples

Conclusion

Questions

Lie Algebras 7 -- Engel's Theorem - Lie Algebras 7 -- Engel's Theorem by MathMajor 2,887 views 5 months ago 44 minutes - Support the channel!Patreon: <https://www.patreon.com/michaelpennmath> Merch: ...

The Big Picture of Linear Algebra - The Big Picture of Linear Algebra by MIT OpenCourseWare 949,661 views 7 years ago 15 minutes - A matrix, produces four subspaces: column space, row space (same dimension), the space **of**, vectors perpendicular to all rows ...

Row Space

Linear Combinations

Null Space

The Null Space

Column Space

The Zero Subspace

Dimension of the Row Space

1. The Geometry of Linear Equations - 1. The Geometry of Linear Equations by MIT OpenCourseWare 1,625,738 views 4 years ago 39 minutes - 1. The Geometry **of**, Linear Equations License: Creative Commons BY-NC-SA More information at <https://ocw.mit.edu/terms> More ...

Introduction

The Problem

The Matrix

When could it go wrong

Nine dimensions

The Kronecker Coefficients Of The Symmetric Group In Complexity And Combinatorics - The Kronecker Coefficients Of The Symmetric Group In Complexity And Combinatorics by Simons Institute 425 views Streamed 2 years ago 1 hour, 1 minute - Greta Panova (University **of**, Southern California) ...

Introduction

Presentation

Background

Multiplicities

Complexity

Example

Geometric Complexity Theory

Proof

Embedding

Properties

Complexity Theory

Combinatorics

Sandrine Péché: Eigenvalue distribution for non linear models of random matrices - Sandrine

Pe che : Eigenvalue distribution for non linear models of random matrices by Centre International de Rencontres Mathématiques 805 views 4 years ago 44 minutes - The talk concerned with the **asymptotic**, empirical eigenvalue distribution of **a**, non linear **random matrix**, ensemble. More precisely ...

Intro

Modernization of a neural network

Learning rate matrices

Empirical eigenvalue distribution

Gbar

Comments

Another model

Assumptions

Eigenvalue distribution

Simple cases

Eigenvalue density plots

Batch normalization

Proof

Matching

Cactus graphs

Formula for the moment

Even monomial recon

Multiple layers

Matrix Martingales in Randomized Numerical Linear Algebra - Matrix Martingales in Randomized Numerical Linear Algebra by Simons Institute 1,101 views 5 years ago 33 minutes - Rasmus Kyng (Yale University) <https://simons.berkeley.edu/talks,-matrix,-martingales-randomized-numerical-linear-algebra> ...

Intro

Matrix Martingales in Randomized Numerical Linear Algebra

Concentration of Scalar Random Variables

Concentration of Scalar Martingales

Concentration of Matrix Random Variables

Concentration of Matrix Martingales

Laplacian Matrices

Laplacian of a Graph

Solving a Laplacian Linear Equation

Additive View of Gaussian Elimination

Why is Gaussian Elimination Slow?

Approximate Gaussian Elimination

Approximating Matrices by Sampling

Approximating Matrices in Expectation

Approximation?

Essential Tools

Matrix Concentration: Edge Variables

Predictable Quadratic Variation

Sample Variance

Summary

RL theory workshop 2023: Andrew Wagenmaker - RL theory workshop 2023: Andrew Wagenmaker by RL theory seminars 150 views 9 months ago 55 minutes - Andrew Wagenmaker **talks**, about "Instance-Optimality in Interactive Decision Making: Toward **a**, Non-**Asymptotic**, Theory" Paper: ... Philippe Loubaton | Large random matrix technics for high-dimensional time series analysis - Philippe Loubaton | Large random matrix technics for high-dimensional time series analysis by CEA-List 264 views 3 years ago 54 minutes - Watch Philippe Loubaton's talk during the First French-German Meeting in Physics, Mathematics and Artificial Intelligence Theory ...

Random Matrix and Probability Theory with Philippe Sosoe - Random Matrix and Probability Theory with Philippe Sosoe by Harvard CMSA 2,153 views 6 years ago 5 minutes, 32 seconds - CMSA Postdoc Philippe Sosoe describes the center's regular **Random Matrix**, and **Probability**, Theory seminars, and highlights **a**, ...

Matroid Seminar - Marthe Bonamy - Matroid Seminar - Marthe Bonamy by Combinatorics & Optimization University of Waterloo 309 views 3 years ago 45 minutes - Graph classes and their **Asymptotic**, Dimension (6 July 2020)

Dimension?

In graphs

In graph classes

Beyond trees: Fatness

BFS layerings

K-minor free graphs

Lower bounds

Growth and Asymptotic Dimension

Conclusion

Clinton Conley: Borel asymptotic dimension and hyperfiniteness - Clinton Conley: Borel asymptotic dimension and hyperfiniteness by Centre International de Rencontres Mathématiques 167 views 9 months ago 55 minutes - CONFERENCE Recording during the thematic meeting : « Measured Group Theory, Stochastic Processes on Groups and Borel ...

Maksym Radziwill: Branching processes in random matrix theory and analytic number theory. - Maksym Radziwill: Branching processes in random matrix theory and analytic number theory. by Centre de recherches mathématiques - CRM 385 views 5 months ago 1 hour - Abstract: The limiting distributions for maxima **of**, independent **random**, variables have been classified during the first half **of**, last ...

Randomized Algorithms for Computing Full Matrix Factorizations - Randomized Algorithms for Computing Full Matrix Factorizations by Simons Institute 929 views 5 years ago 34 minutes - Gunnar Martinsson (University **of**, Texas at Austin) ...

Randomized Svd

Blocked Algorithm

Relative Errors

Computational Timings

Gpu Implementation

Column Pivoting

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