

Curve Fitting

Spoken Tutorial Project

<https://spoken-tutorial.org>

National Mission on Education through ICT

Shraddha Kodavade

FOSSEE, IIT Bombay

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Learning Objectives



Learning Objectives

We will learn about,



Learning Objectives

We will learn about,

► Lines



Learning Objectives

We will learn about,

- ▶ **Lines**
- ▶ **Quadratic polynomials**



Learning Objectives

We will learn about,

- ▶ **Lines**
- ▶ **Quadratic polynomials**
- ▶ **Cubic polynomials**



Learning Objectives

We will learn about,

- ▶ Lines
- ▶ Quadratic polynomials
- ▶ Cubic polynomials
- ▶ **Best fit and Adjustable fit**



Learning Objectives

We will learn about,

- ▶ Lines
- ▶ Quadratic polynomials
- ▶ Cubic polynomials
- ▶ Best fit and Adjustable fit
- ▶ Reduced chi squared statistic and r^2 correlation coefficient



System Requirement



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- ▶ **Windows 10 (64-bit) operating system**



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- ▶ **Chrome version 101.0.49**



Prerequisites



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- ▶ **Learner should be familiar with topics in basic mathematics**



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- ▶ Learner should be familiar with topics in basic mathematics
- ▶ Please use the link below to access the tutorials on PhET Simulations
<https://spoken-tutorial.org>



Link for PhET Simulation

- ▶ Please use the given link to download the PhET simulation
<https://phet.colorado.edu/en/simulations/curve-fitting>



Curve Fitting

- It is the process of constructing a best fit mathematical function, subject to constraints

PhET Simulations



PhET Simulations

In this tutorial we will use,



PhET Simulations

In this tutorial we will use,

► **Curve Fitting PhET simulation**



Summary

We have learnt about,

- ▶ Lines
- ▶ Quadratic polynomials
- ▶ Cubic polynomials
- ▶ Best fit and Adjustable fit
- ▶ Reduced chi squared statistic and r^2 correlation coefficient



Assignment



Assignment

1. Add 5 data points to the cubic polynomial and explore the Adjustable fit option



About the Spoken Tutorial Project

- ▶ Watch the video available at https://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- ▶ It summarises the Spoken Tutorial project



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Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- ▶ Conducts workshops using spoken tutorials
- ▶ Gives certificates to those who pass an online test
- ▶ For more details, please write to contact@spoken-tutorial.org



Answers for THIS Spoken Tutorial

- ▶ Questions in THIS Spoken Tutorial?
- ▶ Visit
<https://forums.spoken-tutorial.org>
- ▶ Choose the minute and second where you have the question
- ▶ Explain your question briefly
- ▶ The Spoken Tutorial project will ensure an answer

You will have to register to ask questions



Acknowledgements

**The Spoken Tutorial project is
funded by the Ministry of Education,
Govt. of India**



Thank you

- ▶ This is Shraddha Kodavade, a FOSSEE summer fellow 2022, IIT Bombay signing off
- ▶ Thanks for joining

