Codingal
Where kids love AI & coding



AI & Data Science course

Grades 9 - 12

Hello ! Young Coders

Get ready to fall in love with AI & coding

Accredited by

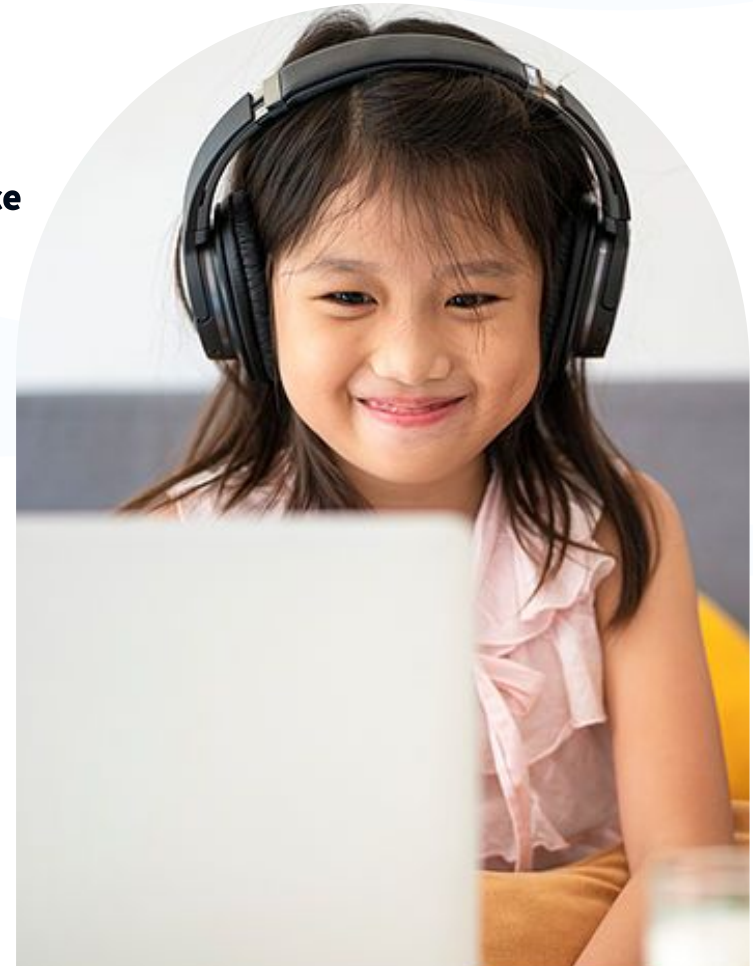
STEM.ORG ACCREDITED EDUCATIONAL EXPERIENCE

Excellent by

Trustpilot

Backed by

Y Combinator



Hugging Face

pandas

git

GitHub

Gemini

TensorFlow

About Codingal

Our Mission: To inspire kids and teens to fall in love with AI & coding

Codingal is a leading online after-school where kids & teens learn AI & coding from expert instructors through live, interactive classes. Our mission is to build the world's largest & most loved programming school for kids & teens, powered by human & AI tutors.

All our instructors come from Computer Science background, and they are rigorously vetted and trained. Every student gets a personalized learning path and individual attention in 1:1 private classes or small group classes with expert instructors. Students learn by building apps, games, animations, and websites in a fun & engaging way.

Kids find Codingal very fun & engaging. They have rated teachers at 4.9 out of 5. Curriculum content is rated at 4.8 out of 5.

Codingal is on a mission to inspire kids to fall in love with AI & coding, and provide the right education to them who will be able to create anything they can imagine and build the future when they grow up to become entrepreneurs, engineers, and scientists.



Codingal empowers kids to become innovators of the future

Why should kids learn AI & Coding?



Coding is the new literacy : Technology has become a core part of our lives, powering everything from websites to smart gadgets. With AI increasingly shaping the future, teaching kids coding and AI prepares them to thrive in a tech-driven world. These skills enable kids to innovate, solve problems, and succeed in a rapidly evolving landscape.

What are the benefits of learning AI & Coding?



- Develops problem-solving skills
- Boosts analytical and data-driven thinking
- Enhances creativity and imagination
- Encourages innovative real-life solutions
- Builds resilience and adaptability

Why this curriculum?



- Accredited by STEM.org
- Rated 4.5 out of 5 by students and parents on Trustpilot
- Based on BIDE (Broad, Inspiring, Deep and Efficient) model
- Focus on STEAM (Science, Technology, Engineering, Arts, Math) subjects
- Enhances cognitive, logical, and computational skills
- Makes learning highly effective, interactive, and fun

Why learning to code is essential for every child in the age of AI

AI development requires coding

Building AI requires coding, which provides instructions to make the system function properly, ensuring everything runs smoothly and behaves as intended.

Augmenting human creativity

AI serves as a powerful tool for enhancing creativity, helping creators but still relying on human direction to produce unique and meaningful results.

Coding as a foundation for AI literacy

Learning to code is essential for understanding technology, enabling effective communication with computers and empowering individuals to create and innovate.

New jobs & industries

The rise of AI creates new opportunities in various fields, from developing AI tools to maintaining and improving systems, generating demand for skilled professionals.

No-code/low-code platforms

No-code platforms simplify building applications with drag-and-drop tools, but coding knowledge is necessary for creating more customized, complex features and designs.

AI & Data Science for teens

A course to advance your Python skills and learn to turn raw data into insight from data structures and databases to machine learning and AI models.

144 Classes
210+ Projects
144 Quizzes

Key learnings

- Basics of Python
- Data Structures and Problem Solving
- SQL and Data Analysis
- Statistics and Visualization
- Machine Learning and Deep Learning

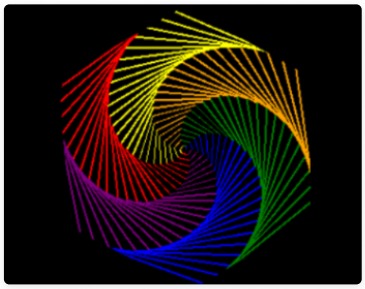
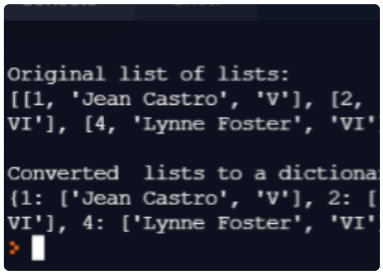
Top achievements

- Build a Recommendation Engine
- Build a Real-time Face Detection App
- Train a Digit Recognizer with CNN
- Predict Stock Market Trends
- Build an AI Chatbot with Dialogflow

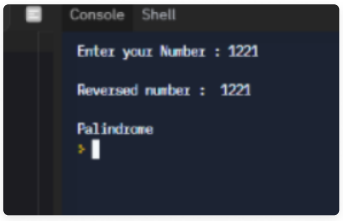
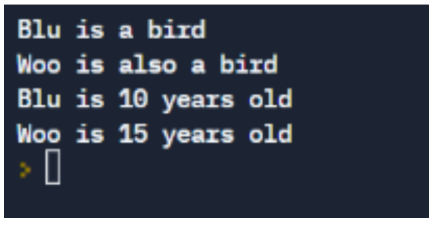
Programming languages: Python and SQL

Libraries & Frameworks : Pandas, Matplotlib, Seaborn, Keras, TensorFlow, OpenCV, Scikit-learn and SQLite, Streamlit

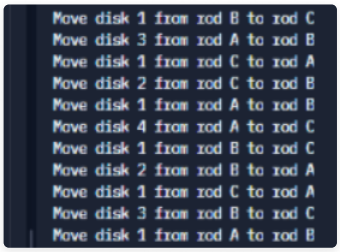
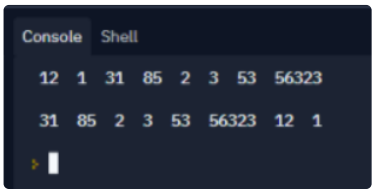
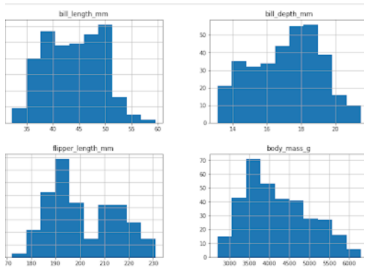
Platforms used: Google Sheets, Dialogflow, VS Code

Module No.	Title & Description	Activity
Module 1	**Python Introduction** Learn Python from scratch. Set up your environment, write your first programs, and use loops, functions, and conditionals to build drawings with Python Turtle.	 Rainbow Spiral
Module 2	**Advanced Python** Level up with Python's most powerful features: lists, dictionaries, and full object-oriented programming including classes, inheritance, abstraction, and polymorphism.	 List To Dictionary

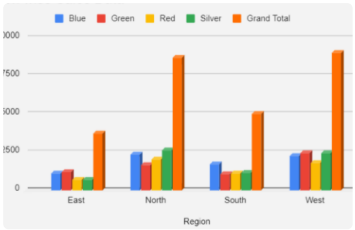
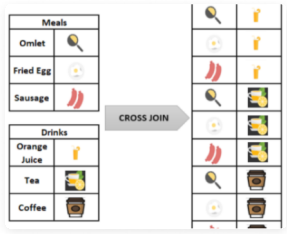
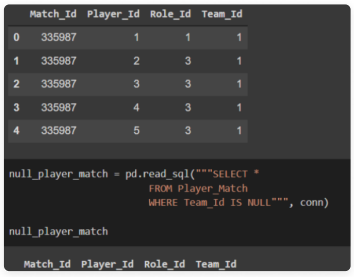
AI & Data Science for teens

Module No.	Title & Description	Activity
Module 3	**Specialization in Python** Read and write files with Python, then build real desktop applications using Tkinter, finishing with a working denomination calculator that runs on your computer.	 Image Makes It Better
	Unlock Python Programmer Certificate	
Module 4	**Data Structures I** Understand how efficient code works. Learn time and space complexity, asymptotic notation, and apply mathematical thinking to solve algorithmic number challenges.	 Palindrom Number
Module 5	**Data Structures II** Explore bit manipulation. Learn how computers handle binary operations and solve real coding challenges including power sets and advanced bitwise problems.	 Ones And Zeros

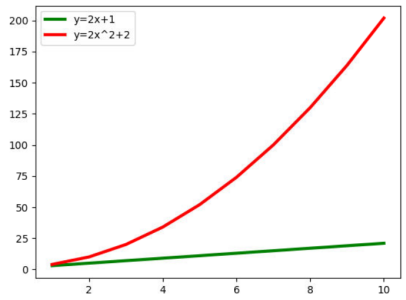
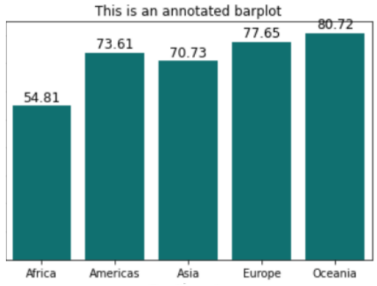
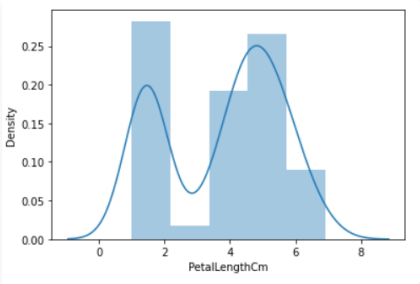
AI & Data Science for teens

Lesson No.	Title & Description	Activity
Module 6	**Data Structures III** Master recursion, one of programming's most elegant tools. Solve progressively harder problems using recursive thinking applied to lists and algorithmic challenges.	 Tower Of Hanoi
Module 7	**Data Structures IV** Dive deep into arrays and algorithmic problem-solving. Apply the Kadane Algorithm to solve the classic maximum subarray problem used in real coding interviews.	 Rotate Array
	Unlock Advanced Python Developer Certificate	
Module 8	**Welcome to Data Science** Enter the world of data science. Use Pandas to analyse data and Matplotlib and Seaborn to create visualizations, finishing with a hands-on capstone project.	 Capstone Project

AI & Data Science for teens

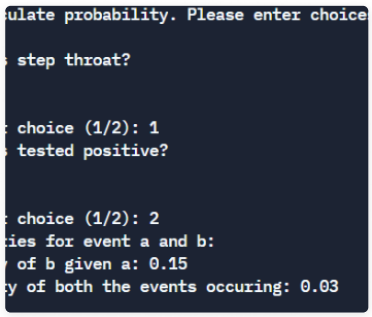
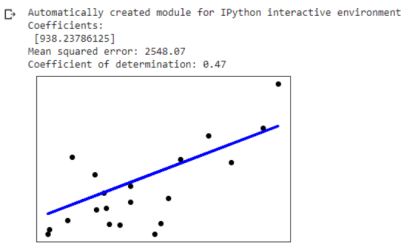
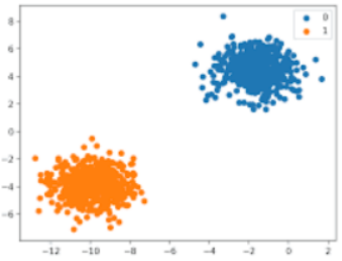
Module No.	Title & Description	Activity
Module 9	**Data Analysis I** Analyse real data using Google Sheets. Master formulas, validation, charts, and pivot tables, then apply everything to a full sales estimation capstone project.	 Sales Estimation
	Unlock Data Analyst Certificate	
Module 10	**SQL** Write SQL from scratch. Create tables, filter and sort data, use aggregate functions, and complete two real capstone projects to build solid database skills.	 Joins
Module 11	**SQL using Python** Connect SQL directly to Python using SQLite. Write queries, apply constraints, perform joins, and build subqueries to manage structured data programmatically.	 Match The Tables
	Unlock SQL Developer Certificate	

AI & Data Science for teens

Lesson No.	Title & Description	Activity
Module 12	**Visualization with Data Science I** Build a strong foundation in data visualization. Create meaningful charts and plots using Python libraries, then apply your skills in a comprehensive capstone project.	 Solve The Equation
Module 13	**Visualization with Data Science II** Go deeper with correlation, distribution, comparison, and time-series charts, then learn to customize plots and fine-tune visuals for real-world presentations.	 Life Expectancy Survey
Module 14	**Statistics I** Learn the math behind data science: statistics, quartiles, data transformation, and variable relationships, finishing with a complete exploratory data analysis.	 Iris Data Survey

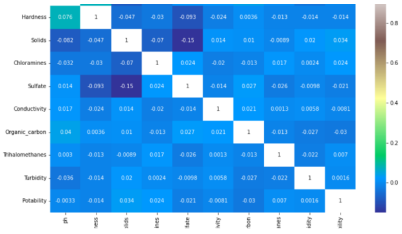
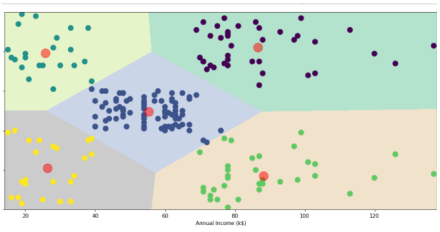
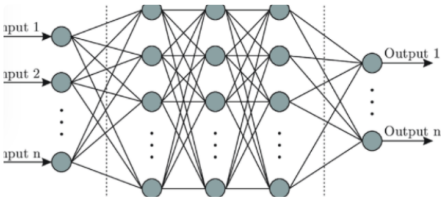
Unlock Data Scientist Certificate

AI & Data Science for teens

Lesson No.	Title & Description	Activity
Module 15	**Intro to Probability** Learn probability from the ground up. Conditional probability, Bayes' theorem, and probability distributions power every machine learning model built later.	 Step Throat
AI Module 16	**Machine Learning I** Step into machine learning. Understand how models learn from data, explore regression and classification, and implement your first linear regression model from scratch.	 Regression Analysis
AI Module 17	**Machine Learning II** Deepen ML skills with logistic regression and multi-class classification, then build a recommendation engine using the same technology behind Netflix and Spotify.	 Binary Classification

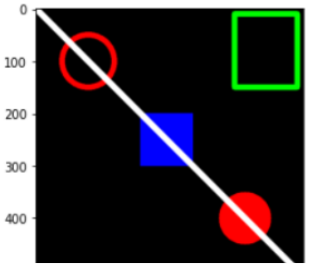
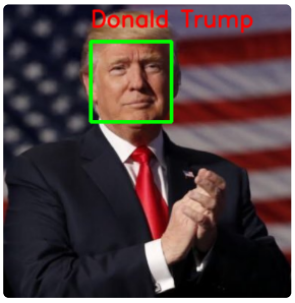
Unlock Capstone Project

AI & Data Science for teens

Lesson No.	Title & Description	Activity
AI Module 18	**Machine Learning III** Master KNN, decision trees, and random forests, then apply them to real datasets including Legendary Pokemon classification and water quality prediction.	 Water Quality Prediction
AI Module 19	**Machine Learning IV** Explore unsupervised learning: K-means and density-based clustering, association rule learning, and finish by analysing a real live sales dataset.	 Clustering
AI Module 20	**Deep Learning I** Enter deep learning. Understand how neural networks mimic the human brain and implement your own Artificial Neural Network using Keras and TensorFlow.	 My Neural Network

Unlock Advanced AI Programmer Certificate

AI & Data Science for teens

Lesson No.	Title & Description	Activity
AI Module 21	**Deep Learning II** Learn Convolutional Neural Networks and build two real projects: an image classifier and a digit recognizer that identifies handwritten numbers with AI.	 Image Classifier
AI Module 22	**Deep Learning III** Work with computer vision using OpenCV. Detect colors, shapes, and faces in real time, then build a fun interactive 3D mirror effect with your camera.	 Drawing Through OpenCV
AI Module 23	**Deep Learning IV** Apply deep learning to ambitious projects. Build a chatbot, detect faces, predict stock prices, detect lane lines, and generate automatic text summaries.	 Face Recognition

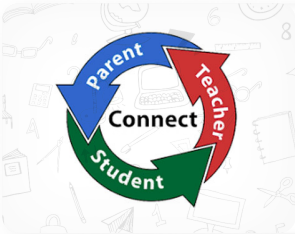
Unlock Expert AI Programmer Certificate

AI & Data Science for teens

Lesson No.	Title & Description	Activity
AI Module 24	**Geospatial Data Analysis** Turn location data into answers on a realistic world map. Plot cities, compare countries, colour regions, measure distances, cluster places, and launch your own live Streamlit web app. Then put your skills to the test.	 Geospatial Data
Data Science Test		

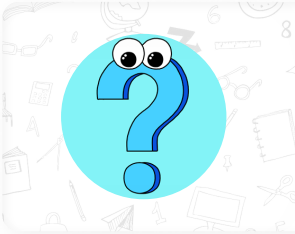
Unlock Expert AI Programmer Certificate

Top benefits of learning at Codingal



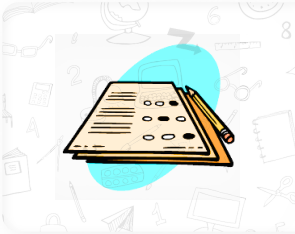
1. Regular PTM

Great opportunity for parents and teachers to open two-way communication and to share insights and information for the holistic development of a child.



2. Regular doubt session

After every module solve all your queries in this personalized session. The toughest problems addressed – concepts revised and doubts cleared!



3. Engaging quizzes

Quizzes are fun and help us remember important facts. These well-targeted and tailor-made quizzes will boost self-esteem and confidence among kids.



4. Thrilling competitions

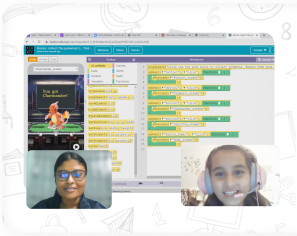
Regular competitions are conducted to encourage students to showcase their skills and develop their ideas.



5. Learning Certificates

Show the world what you can do with a certificate for every amazing skill you master.

Top benefits of learning at Codingal



6. Live personalized classes

Understand concepts faster with personal attention from teachers. Learn coding from highly qualified teachers trained to make learning effective and impactful.



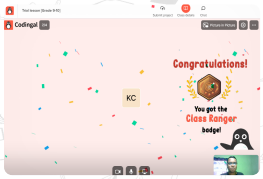
7. Lifetime access to class videos

Forgot what was taught in the last class? No worries. Watch the recorded class video anytime to refresh your memory.



8. Lifetime access to resources

Get lifetime access to our exclusive learning content including DIY sheets, videos, and other resources.



9. Gamified learning

Codingal makes learning fun with gamification. Students can take quizzes or complete projects to earn points, badges, and rewards.



10. After class projects

For each class, students have the opportunity to complete an after-class project, enabling them to apply what they've learned, test their skills, and receive valuable feedback from their teacher.

Students and parents love Codingal



Ray
Japan

"I love learning with Codingal. It's always fun and the teacher is nice and kind.



Lavanya
India

"The courses develop multiple skills and ensure maximum clarity of coding concepts.



Billie
Kenya

"Codingal classes are so much fun. I've started to really enjoy creating things with code.



Elara Dalton
USA

"I referred Codingal to my friend, and now we're both into coding! She joined the classes too. Plus, Codingal gave me a whole month of free coding classes.

Trustpilot
TrustScore **4.7** | **302** reviews

Google
4.6 out of 5

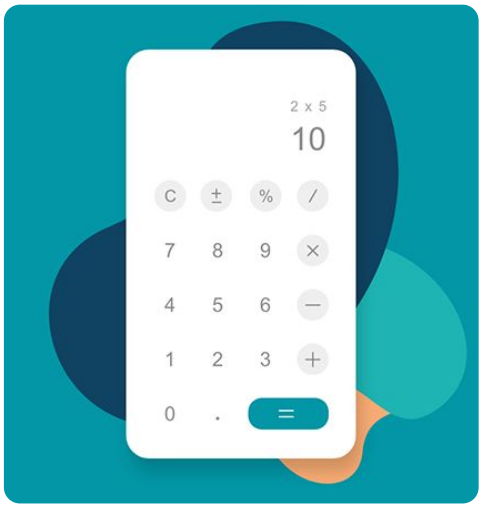
facebook
5 out of 5

Unlock your child's potential in Math & Science with AI and Coding



In Science, AI and Coding enable simulations and data analysis. Students use AI models to predict outcomes in biology, chemistry, and climate science, learning how coding drives scientific discovery and accelerates problem-solving in real-world applications.

Learning AI and Coding help students apply mathematical concepts like linear algebra and statistics to real-world problems. Coding AI models allows them to visualize math, make predictions, and see how math powers data analysis and decision-making.



Our teachers provide individual attention to kids, customize projects based on their interests and make them fall in love with AI & Coding, enabling them to also perform well in other subjects in school.

Foundation of Codingal's curriculum

BLOOM

Bloom's Taxonomy is a standard guideline for K-12 content development, which includes 6 stages of learning: Remember, understand, apply, analyze, evaluate and create.

BIDE

The BIDE (Broad, Inspiring, Deep and Efficient) model has been developed by Codingal in-house to ensure that our curriculum caters to the unique learning style of every child.

STEAM

STEAM is an approach to learning that uses Science, Technology, Engineering, the Arts and Mathematics as access points for guiding student inquiry, dialogue, and critical thinking.

AI & Coding - Gateway to success in the future

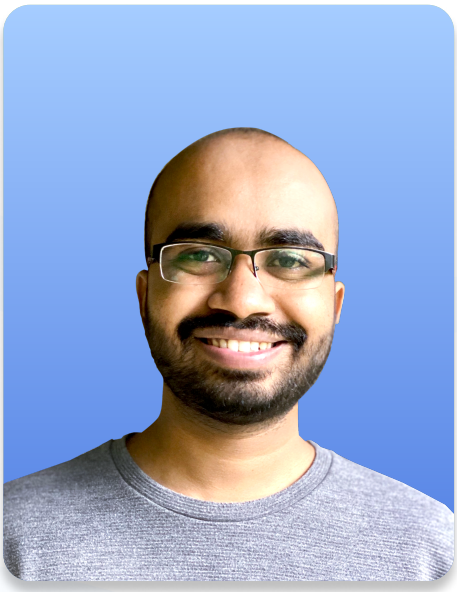
Now is a great time to be entering the coding world because technology will change more in the next 10 years than it has in the last 50.

- Bill Gates

Whether you want to uncover the secrets of the universe, or you just want to pursue a career in the 21st century, basic computer programming is an essential skill to learn.”

- Stephen Hawking

A note from Codingal Founders



Teaching coding and AI to kids is a profound responsibility. Our dedicated educators and meticulously crafted curriculum reflect our deep understanding and commitment to nurturing future innovators.

Vivek Prakash

Co-founder & CEO
B.Tech & M.Tech, IIT Roorkee

LinkedIn



Learning to code is not just about reaching new heights like going to Mars or the moon. Coding, along with AI, equips kids with the skills to think critically and creatively, empowering them at multiple levels.

Satyam Baranwal

Co-founder & COO
B.Tech, IIT Dhanbad

LinkedIn

Begin your child's AI & coding journey today

Is your child ready for the future?

Visit www.codingal.com

Try a free lesson!

Thank You

Built by alumni of

Google amazon

IIT Roorkee IIT Dhanbad

In partnership with

IIT Bombay IIT Guwahati

Hewlett Packard Enterprise BITS Pilani

Accredited by STEM.org

STEM.org ACCREDITED EDUCATIONAL EXPERIENCE

Backed by

Y Combinator REBRIGHT PARTNERS

Got questions? Contact us anytime.

Send us a message

support@codingal.com

Codingal
Where kids love AI & coding

© Codingal Inc.