THINKLAND.AI
广问AI·机器学习

少儿人工智能课程

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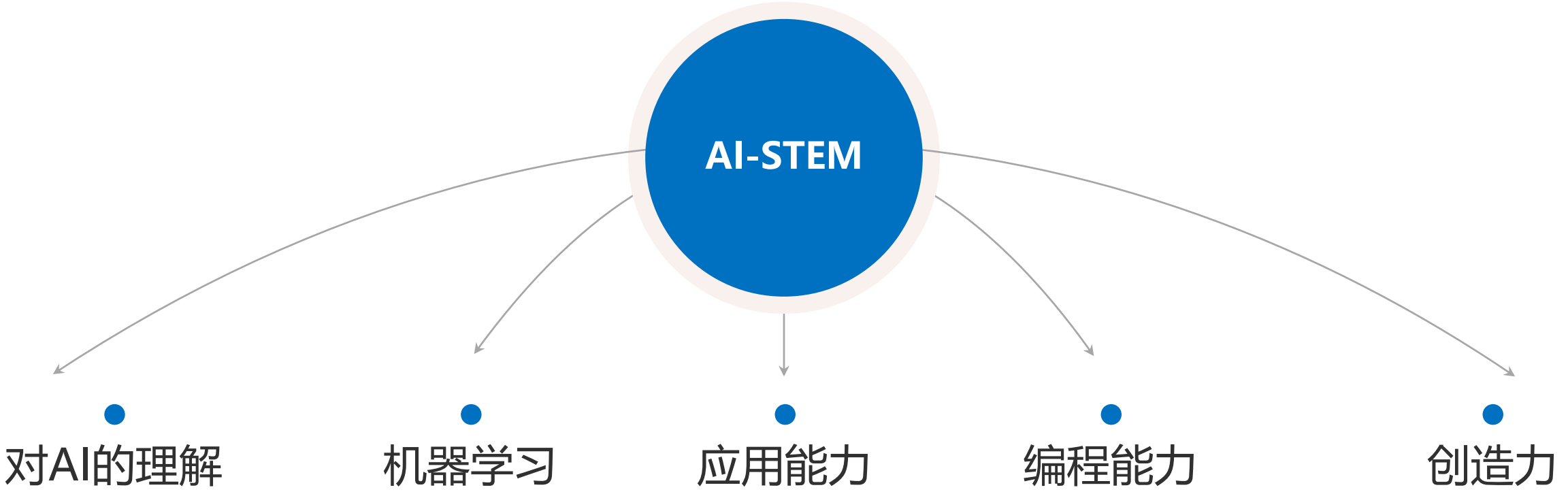
赋予孩子AI的创造力

Topic

- 课程定位
- 课程体系
- 选课指南
- 教学平台
- 老师管理
- 关于我们

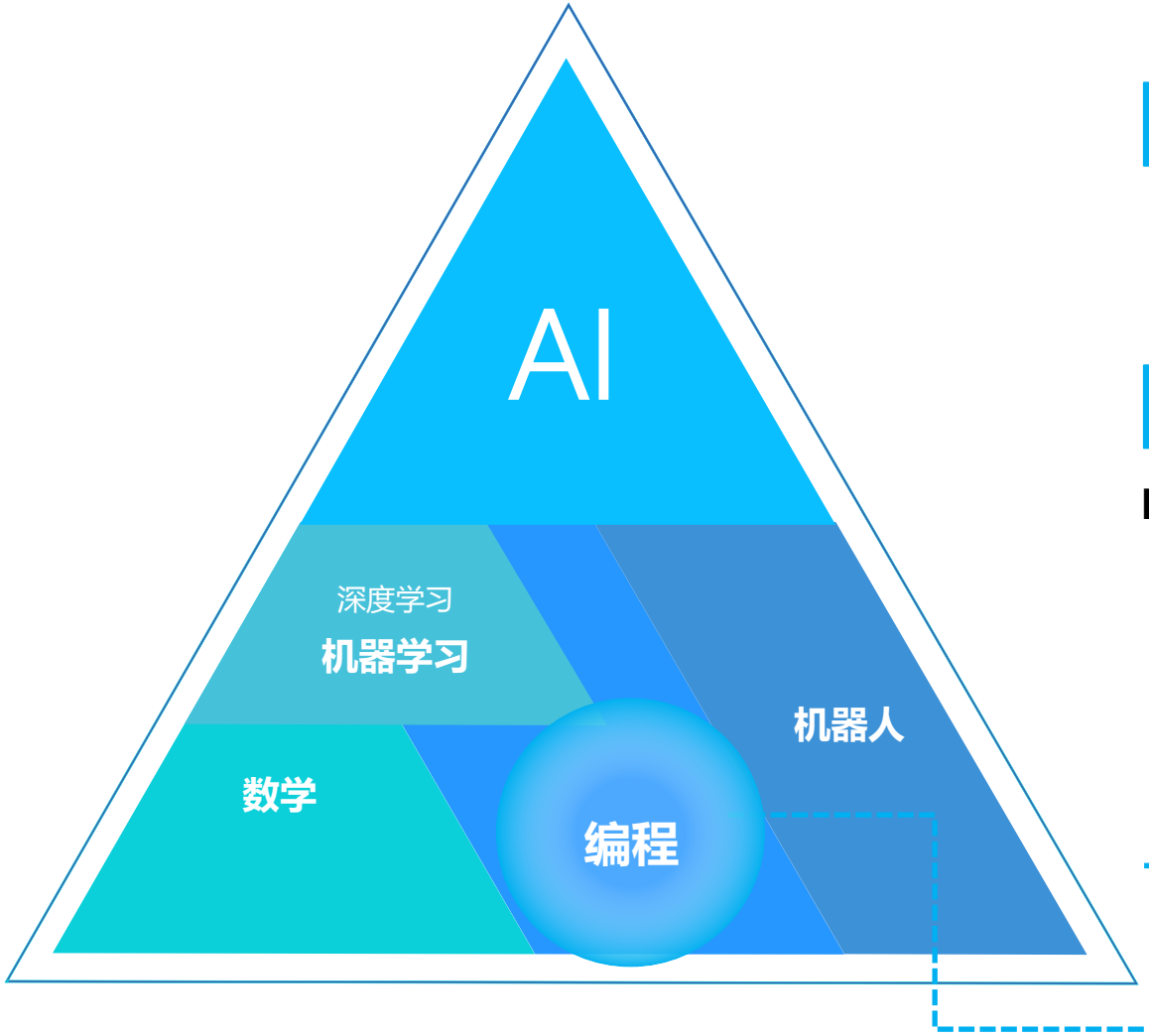
培训兴趣，学习编程，了解AI



在学习编程的同时，学习AI相关的知识，让学生能够通过编程去实现AI的应用（游戏、智能家居等），孩子的思维转变，以及他未来可能在学习和工作中的收获.

竞赛得奖，深入AI

青少年人工智能课程包括什么



少儿编程

- 教授儿童编程语言，图形化编程以模块化方式让游戏，动画，积木构件的形式呈现。

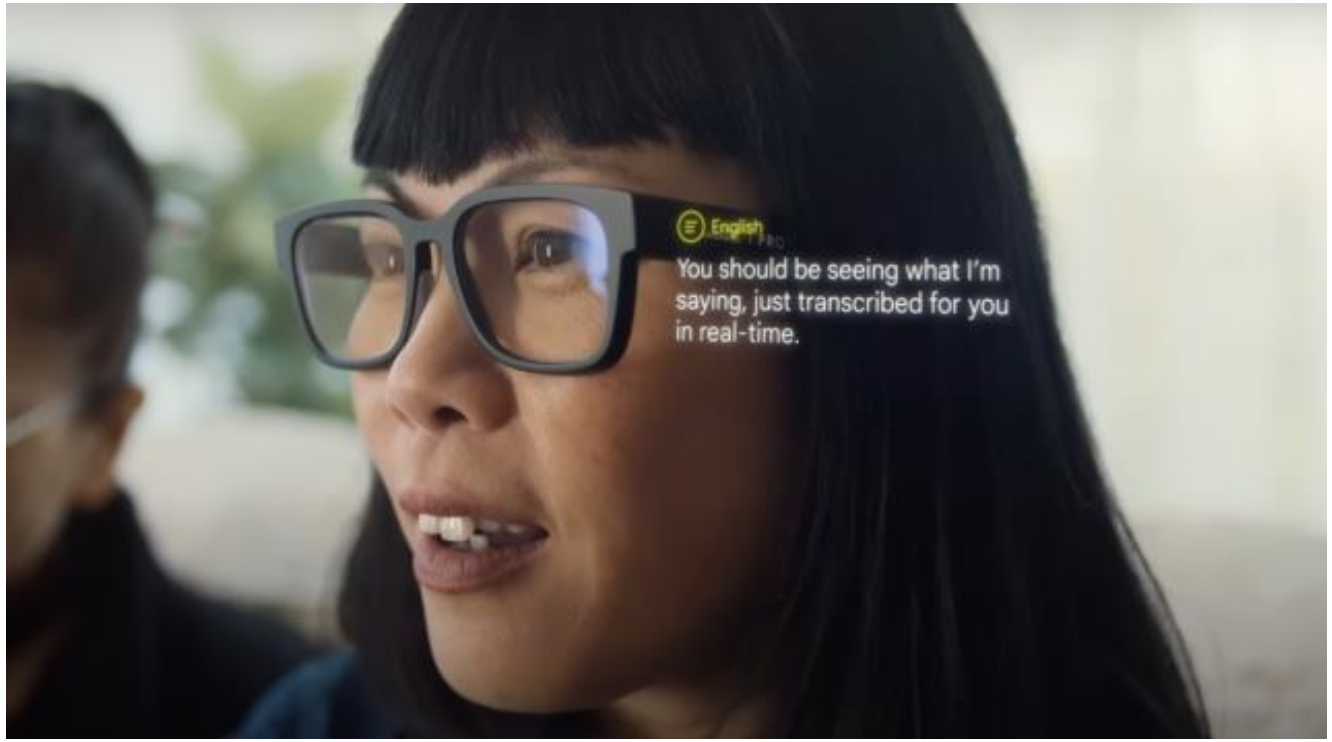
机器人教育

- 通过组装、搭建、编写程序运行机器人。

编程是学习AI的基础，是工具。学习计算思维

AI：算法，算力，数据

Why to learn AI?



https://www.youtube.com/watch?v=Ij0bFX9HXeE

Figure 1: Average Salaries by Discipline / Bachelor's Degrees

BROAD CATEGORY	2022 SALARY PROJECTION	2021 SALARY PROJECTION	% CHANGE
Computer Sciences	$75,900	$72,173	5.2%
Engineering	$73,922	$71,088	4.0%
Math & Sciences	$66,760	$63,316	5.4%
Social Sciences	$61,173	$59,919	2.1%
Business	$60,695	$58,869	3.1%
Agriculture & Natural Resources	$57,807	$54,857	5.4%
Communications	$55,455	$58,174	-4.7%
Humanities	$50,681	$59,500	-14.8%

Source: Winter 2022 *Salary Survey*, National Association of Colleges and Employers

循序渐进的学习体系

000

Preschool (5-7 岁)

001

1年级+ (7-9 岁)

002

3年级+ (9-12 岁)

003

5年级+ (10-14 岁)

课程以培养实际操作动手能力为指导思想
激发孩子与生俱来的创造力和天赋
从而帮助孩子打开人工智能大门

软件类课程　硬件类课程　综合类课程

小班·中班·大班

- 学龄前启蒙和创造力开发
  - 001 Duplo乐高搭建
  - 002 小粒乐高搭建
  - 003 卡片编程启蒙
  - 004 乐高wedo

一年级上

- 少儿人工智能编程教育
- 少儿人工智能硬件教育
- 编程与硬件小学入门
  - 101 谷歌Scratch入门
  - 201 micro:bit硬件入门
  - 线上独享 彩虹板-硬件教学

三年级以上

- 编程与硬件小学中阶
  - 301 Scratch计算思维开发
  - 302 micro:bit创意开发
  - 303 AppInventor移动创意

五年级以上

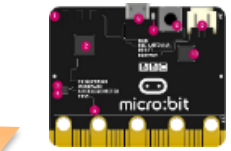
- 人工智能应用入门
  - 311 机器学习和AI应用
- 代码编程入门
  - 321 Python入门 - 游戏编程
- 竞赛辅导
  - 331 创客比赛预备班
  - 431 中鸣超级机器人比赛
- 创意与创客
  - 401 Arduino入门与创意
  - 402 树莓派入门与创意

七年级以上

- 人工智能深入
  - 501 Python计算机科学：数据结构，算法和高阶编程
  - 502 Linux和树莓派
  - 503 Tensorflow初级机器学习

101
(9+岁)

005
(11-15岁)



AI 课程体系-Core

THINKLAND.AI
广问AI·机器学习

AI000 Scratch JR for 5-7 yrs.	Level #1	→	Level #2				
AI001 Scratch for 7-9 yrs.	Level #1	→	Level #2	→	Level #3	→	Level #4
AI002 Scratch+AI for 9-12 yrs.	Level #1	→	Level #2	→	Level #3		
AI003 Python for 10-14 yrs.	Level #1	→	Level #2	→	Level #3	→	Level #4
AI005 Java for 11-15 yrs.	Level #1	→	Level #2	→	Level #3	→	Level #4

*Each level is 16 hours of class

分级课程介绍 - Scratch

Thinkland.AI STEM Class Computer Science and AI

000 Scratch Jr. for 5 - 7 years old

Overview

Scratch Jr. is an introductory, block-based programming language for children aged 5 to 7. This course encourages creativity by allowing children to create their own interactive projects. Students can express themselves and bring their characters to life using Scratch Jr.

Contents

1、Getting Started:
Students will learn the basics of using Scratch Jr. and create a dance party game!

2、Animations – 4 activities:
Students will create four small animations and combine them together to make a movie

3、Stories – 6 activities:
Students will make their own stories come to life by adding dialogue and new scenes to the animations!

4、Games – 5 activities:
Students will learn how to make four basic games and combine everything they learn to make one final game.

Prerequisite	Class date	Class time
Parent's company is encouraged	Weekday / Weekend	1-2 Hour Class / 1-2 Classes per week

Scan QR to view more class options

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Thinkland.AI STEM Class Computer Science and AI

001 Scratch Coding Based on Google CS First

Overview

Based on Google's CS First Curriculum, AI001 is designed for children aged 7 to 9 to systematically learn programming, explore storytelling techniques, build fun games, and craft presentations. This course allows students to showcase their creativity through the medium of programming and digital design.

Contents

Storytelling
1. Dialogue, 2. Check It Out, 3. Settings, 4. Premise, 5. Characterization, 6. Interactive Storytelling, 7. Personal Narrative, 8. Innovation Story

Game Design
1.Gaming Story、2.Racing Game、3.Maze Game、4.Platform Game、5.Escape Game、6.Launcher Game、7.Quest Game、8.Cave Surfing Game

Sports
1. Victory Celebration, 2. Sports Commentary, 3. Net Sports, 4. Fitness Gadget Commercial, 5. All-Star Passing Drill, 6. Batter Up, 7. Extreme Sports, 8. Post-Game Interview"

Prerequisite	Class date	Class time
No Prior Experience Required	Weekday / Weekend	1-2 Hour Class / 1-2 Classes per week

Scan QR to view more class options

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Thinkland.AI STEM Class Computer Science and AI

001+ Scratch Coding+ : Game Design

Overview

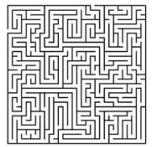
Scratch+ Game Design is centered around the various logic concepts used within many common games. Students will apply their basic knowledge of scratch as well as new important logic and computer science concepts through recreating existing and original games. Students can express their creativity through game design. The course focuses on the application of code in original game mechanics created by the students

Contents

· Level 1 - Classic Games
1. Maze Game
2. Platformer
3. Tower Game
4. Breakout
5. Snake

· Level 2 - Modern Games
1. Top-down Shooter
2. Scrolling Platformer
3. Online multiplayer Board Game
4. Online Multiplayer Fighting Game






Prerequisite	Class date	Class time
Prior Scratch Experience Required	Weekday / Weekend	1-2 Hour Class / 1-2 Classes per week

Scan QR to view more class options

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Thinkland.AI STEM Class Computer Science and AI

002 Introduction to Machine-learning based Artificial Intelligence using Scratch

Overview

Using our proprietary Scratch with AI Platform, this course introduces children aged 9 and up to concepts in machine learning and how to apply them in real world scenarios.

Contents

- **Session 1 (16 Hours)**
  1. Introduction to Machine Learning
  2. Image Recognition & Spongebob and Friends
  3. Natural Language Processing & Simple Smart Home
  4. Sentiment Analysis & Praises and Criticisms
- **Session 2 (16 Hours)**
  5. Facial Recognition & Facelock
  6. Decision Trees & Flappy Bird
  7. Decision Trees & Pacman
  8. Speech + Speaker Recognition & Voice Lock
- **Session 3 (16 Hours)**
  9. Brainstorming Ideas + Workshop
  10. Create your own project & Implement Machine Learning Concepts


Prerequisite	Class date	Class time
Prior Scratch Experience Requied	Weekday / Weekend	1-2 Hour Class / 1-2 Classes per week

Scan QR to view more class options

Email: office@thinkland.ai

002 AI机器学习项目库

Scratch+AI

5.面孔识别

课程简介	介绍生物识别技术并使用面部识别构建简单的设备锁
机器学习	• 图像识别、分类、生物识别技术、偏见（Bias）
难度	★

1.介绍

2.海绵宝宝和朋友

3.智能家居(简易版)

4.赞扬与批评

5.面孔识别

6.沃尔多在哪儿

7.声音锁

8.飞翔的小鸟

9.吃豆人

10.智能家居

11.总统的演讲

12.电影海报

动手做项目　智能游戏　小组合作

AI 课程体系

THINKLAND.AI
广问AI·机器学习

核心课程：000， 001，002，003，005
竞赛课程：006，301
扩展课程：001+，003+ ，201
硬件课程：100 (Micro: bit)， 101(Arduino)， 102(Raspberry Pi)

Course Name	Age/Grade	Level (16 hours each)				Course Intro
Children's AI Programming 000 Scratch Jr.	Age 5-7	1	2			AI000ScratchJr
Children's AI Programming 001 Scratch	Age 7-9	1	2	3		AI001Scratch
Children's AI Programming 001+ Scratch Game Design	Age 8+	1	2			AI001+GameD
Children's AI Programming 002 Scratch+AI	Age 9-12	1	2	3		AI002ScratchAI
Children's AI Programming 003 Python	Age 10-14	1	2	3	4	AI003Python
Children's AI Programming 003+ Python PyGame	Age 10-14	1	2			AI003+PyGame
Children's AI Programming 005 Java	Age 11-15	1	2	3	4	AI005Java
Children's AI Programming 006 Data Structures	Age 12+	1	2	3	4	AI006DS&A
Children's AI Robotics 101 Arduino	Age 9-12	1	2	3		AI101Arduino
Children's AI Programming 201 HTML&CSS	Age 9+	1	2			AI201WebD
Children's AI Programming 301 Python+AI	Age 12+	1	2			AI301ML

分级课程介绍 - 竞赛课程

Thinkland.AI STEM Class
Computer Science and AI

003 Get started with Python

Overview

The AI003 course begins with Python fundamentals and gradually expands computational thinking skills using projects for hands-on learning.

Contents

- Session 1 (16 Hours)
  - Introductory Topics
  - Conditionals
  - Looping
  - Fun projects!
- Session 2 (16 Hours)
  - Functions
  - Modules
  - Object-Oriented Programming
- Session 3+ (24 Hours)
  - Python Review
  - Design and Implementation of Games (and Applications)
  - Introducing PyGame - 2-D Graphics Game Design using Python

Prerequisite	Class date	Class time
Prior Coding Experience Suggested	Weekday / Weekend	1-2 Hour Class / 1-2 Classes per week

Scan QR to view more class options

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Thinkland.AI STEM Class
Computer Science and AI

003+ Python Application and PyGame

Overview

Python PyGame course introduces computational thinking skills behind software application design and PyGame. The project-based approach employs a pedagogical sequence: project demo -> requirements analysis -> problem presentation -> solution proposal and implementation -> reinforcement of syntax and coding concepts. The basics of a popular Python library (pygame) bridgesthe concepts common in computer game development while further developing the students' software development skills.

Contents

- Level 1 - Design and Implementation of Games
  1. Using the Debugger
  2. Hangman
  3. Tic-Tac-Toe
  4. The Bagel Deduction Game
  5. Cartesian Coordinate System
  6. Sonar Treasure Hunt
  7. Caesar Cipher
  8. Reversegam Game
- Level 2 - 2-D Graphic Game Design using Python
  1. Creating Graphics
  2. Animating Graphics
  3. Collision Detections
  4. Using Sounds and Images
  5. A Dodgers Game with Sounds and Images

Prerequisite	Class date	Class time
Prior Python Experience Required	Weekday / Weekend	1-2 Hour Class / 1-2 Classes per week

Scan QR to view more class options

Email: office@thinkland.ai

Thinkland.AI STEM Class
Computer Science and AI

301 Python + Machine Learning

Overview

Introduction to machine learning course is for those who have basic knowledge of Python programming and are curious about the magic behind Artificial Intelligence (AI). It covers machine learning key concepts, design principles, and classic algorithms from the widely used traditional algorithms to the booming technology of deep learning and neural networks. The students will be guided to solve real-world problems with what they learn and enjoy the fun of building AI projects from scratch.

Contents

Topic 1: Introduction to machine learning basics
Topic 2: Decision Trees
Topic 3: K-Nearest Neighbors (KNN)
Topic 4: Linear Regression
Topic 5: Image Processing and Computer Vision
Topic 6: Deep Learning and Neural Networks
Topic 7: Image Classification and Face Recognition
Topic 8: A Tour of Modern Machine Learning Technologies

Prerequisite	Class date	Class time
Prior Python Experience Required	Weekday / Weekend	1-2 Hour Class / 1-2 Classes per week

Scan QR to view more class options

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Thinkland.AI STEM Class
Computer Science and AI

005 Introduction and Advanced Java

Overview

Our Java course begins by developing an understanding of computer hardware components, to help build a solid foundation for programming knowledge. We then cover fundamental control flow concepts such as looping and conditionals, and later move into object oriented programming. Students will finish the course by learning about complex industry-level topics such as data structures and lambda functions.

Contents

- Session 1 (16 Hours)
  1. Introductory Topics
  2. Data Types
  3. Looping
  4. Project Lab 1 - Mini market
- Session 2 (16 Hours)
  5. Advanced Boolean and Decision Structure
  6. Loops and Iterators
  7. Project Lab 2 - Rock paper scissors game
  8. Basics of Errors and Exception
  9. Array and ArrayLists
  10. Final Project - Mini market revisited
- Session 3 (16 Hours)
  1. Binary, hexadecimal, and ASCII
  2. Math class and arithmetic functions
  3. Project lab 3 - Create a calculator
  4. Object-oriented concepts part 1
  5. Object-oriented concepts part 2
  6. Project lab 4 - Create your own objects
- Session 4 (16 Hours)
  7. Threads, Runnables and Concurrency
  8. Advanced Exceptions and Errors
  9. Advanced ArrayLists and list
  10. Lambda Functions and new java additions
  11. Final project - Create your own objects extra

Prerequisite	Class date	Class time
Prior Coding Experience Suggested	Weekday / Weekend	1-2 Hour Class / 1-2 Classes per week

Scan QR to view more class options

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Thinkland.AI STEM Class
Computer Science and AI

006 Data Structure + Algorithm

Overview

An in-depth course about two of the fundamental topics in computer science -- data structures and algorithms. This course is designed for those who have basic knowledge of Java programming and ready to move a step beyond programming language. It covers everything you need to know for competitive programming, from basic concepts to practical experience. Most importantly, this course develops the skills of modeling and logical thinking, and clears the way towards advanced topics in computer science and artificial intelligence.

Contents

Level 1
1. Introduction, 2. Recursion, 3. Dynamic Promgramming, 4. LinkedList & Two Pointers, 5. Sort, 6. Tree & Binary Search Tree, 7. Divide & Conquer

Level 2
1. Binary Search、2. Recursion、3. Dynamic Programmin、4. Sort: Two Kinds、5. Introduction to Queue/Stack/Heap、6. Breadth-First Search、7. Depth-First Search

Level 3
1. Introduction to Map/Set, 2. Graph, 3. Breadth-First Search, 4. Best First Search, 5. Prefix Sum, 6. Bit Operation, 7. Greedy

Prerequisite	Class date	Class time
Prior Java Experience Required	Weekday / Weekend	1-2 Hour Class / 1-2 Classes per week

Scan QR to view more class options

Email: office@thinkland.ai

USA Computing Olympiad

美国计算机奥林匹克竞赛

Timeline

Grade 11 (17 y/o, HS Junior-S2)	2nd try (Silver/Gold / Platinum）
Grade 10 (16 y/o, HS Sophomore-S2)	1st try (Bronze/Sliver/Gold)
Grade 9 (15 y/o, HS Freshman-S2)	Java Level 1-4 (AP Computer Science A)
Grade 8 (14 y/o)	Python Level 1-5

*再提前一两年准备更好，有更多时间刷题练习就更有把握

Thinkland.AI USACO Plan

School@thinkland.ai

AI000 Scratch Jr
(5-7 years old)

AI001 Scratch
(7-9 years old)

AI001+ Scratch Game
(8+ years old)

AI002 Scratch+AI
(9-12 years old)

USACO Bronze in Python

AI003 Python
(10-14 years old)

AI003+ Pygame
(10-14 years old)

AI301 Python+AI
(12+ years old)

AP Computer Science A

AI005 Java
(11-15 years old)

AI007 C++
(13+ years old)

USACO

AI006 Data Structures & Algorithms
(12 years old)

- Exercise Class
- Summer Camp
- Pre-Contest Training

Year #1 USACO Silver/**Gold** in Java

Rising Bronze/**Silver** → **Adv.** Silver/**Gold**

Year #2 USACO Gold/**Platinum** in Java

Rising Silver/**Gold** → **Adv.** Gold/**Platinum**

FutureHacks: 人工智能编程竞赛

Hackathon for Children

黑客风FutureHacks是一项免费的人工智能编程竞赛活动，鼓励7-15岁中小学生展示其学到的编码能力，发掘其创造力并结交朋友。参与者可以参与竞赛力争获奖，也可以参加现场免费体验课程，与有共同兴趣者交流。每年于春季和秋季各举行一次

I: 2020/09/19-20
II: 2021/03/27-28
III: 2021/08/27-29

IV: 2022/08/26-28

http://futurehacks.net

选课指南

Student Age	Coding Experience	Course to Choose	Course We Recommend
5-6 y/o Kindergarten	None / Scratch Jr	000	000
7 y/o Grade 1	None / Scratch Jr	001	001
	Scratch	001*	
8-9 y/o Grade 2-3	None / Scratch Jr	001	001
	Scratch	001* / 002 / 003	
	Python	002 / 003*	002
10-11 y/o Grade 4-5	None / Scratch Jr	001	002
	Scratch	001* / 002 / 003	
	Python	002 / 003* / 005	003
12-14 y/o Grade 6-7-8 Middle School	None / Scratch Jr	001 / 003	003
	Scratch	003 / 005	
	Python	003* / 005	(004)
	Java	003 / 005*	005
15 y/o Grade 9 High School	None / Scratch Jr	003	005
	Scratch	003 / 005	
	Python	003* / 005	
	Java	003 / 005*	

https://thinkland.ai/myclass

Timmy's Evaluation

Class Participation

Timmy participates in class with high frequency. He constantly volunteers and always tries his best to answers the questions that are asked.

Class Attention

I never have to repeat myself to Timmy. He pays close attention to every detail of the lesson. I can tell that he is interested in class because of the meaningful questions he asks and his great participation.

Homework Completion

Timmy completed all homework assignments. I have never had a complaint about him not practicing after class.

Knowledge

Timmy is extremely knowledgeable. He knew much before entering the class, but was open to learning new things. He mastered every topic introduced throughout all the classes and sometimes would even stay after class to learn more from.

Conclusion

The effort that I see from Timmy is breathtaking. He is an exemplary student and showed this in every class with his participation and interest. I noticed from the first day that he had a lot of potential and room for growth. He will definitely benefit from more advanced Python lessons. I hope to see him in future classes!

Class recommendation: AI003 Python Level 2

选课指南: 测试

TTK Coding Test

This is for students to evaluate their progress throughout the classes with a quick 30 minute to 1 hour open note test. There will be four sections: basic understanding, project understanding, debugging, and creating. There is a total of 70 points.

https://school.thinkland.ai/ttktest/

AI000 Scratch Jr

Scan QR or Clink link to test Scratch Jr now.

AI001 Scratch

Scan QR or Clink link to test Scratch now.

AI002 Scratch+AI

Scan QR or Clink link to test Scratch+AI now.

AI003 Python

Scan QR or Clink link to test Python now.

教学平台school.thinkland.ai

教学支持

课程是教育产品的核心，配合以生动有趣的多媒体视频，强调动手操作，以制作实际项目的形式来教授学生。

教学工具

作为产品的基础， 为教学提供机器学习的AI模型训练系统，计算机编程语言、辅助硬件设备和机器人设备的支持。

教学平台

将课程体系和教学工具整合的在线学习平台，是培训内容的载体，支持学习和互动。老师授课采用直播方式，便于考核。

线下老师授课 + 线上教学系统和线上视频录播教学课程

① 支持学生、教师、家长和学校不同角色和权限创建账户；
② 在线云课堂的课程预设在平台中；
③ 老师的教课内容和教案也在平台中；
④ 提供编程学习环境： Scratch、Python、makecode
⑤ 作为学习系统，学生可以看课程内容，做作业，提交作业
⑥ 作为教学系统，为老师提供班级管理、课表管理、内容管理等；
⑦ 家长可以查看学生学习情况。
⑧ 支持几乎所有主流人工智能平台和框架学习

课堂管理 (教学平台school.thinkland.ai)

7am in the morning of the class day

30 minutes prior to the class time

课前提醒

Summer AI005-1 Wed 10:00am-12:00pm

Teacher: Vikram Sharma
Class status: ● class is ON (good job!)
Submit time: 6/16 10:01:29

Class No-Show 6/16: AI003-13

Thinkland Office
to Bryan, Teacher, me, bryanotq2008

Dear Bryan Ong's parents,

It is 6:07pm now. Bryan has not shown up in AI003-
Wed 6/16).

To join the Zoom meeting class:

课中点名

Class Report

Teacher: Vikram Sharma

Session#2-1. Control Flow Structures and Boolean Logic

Class Summary

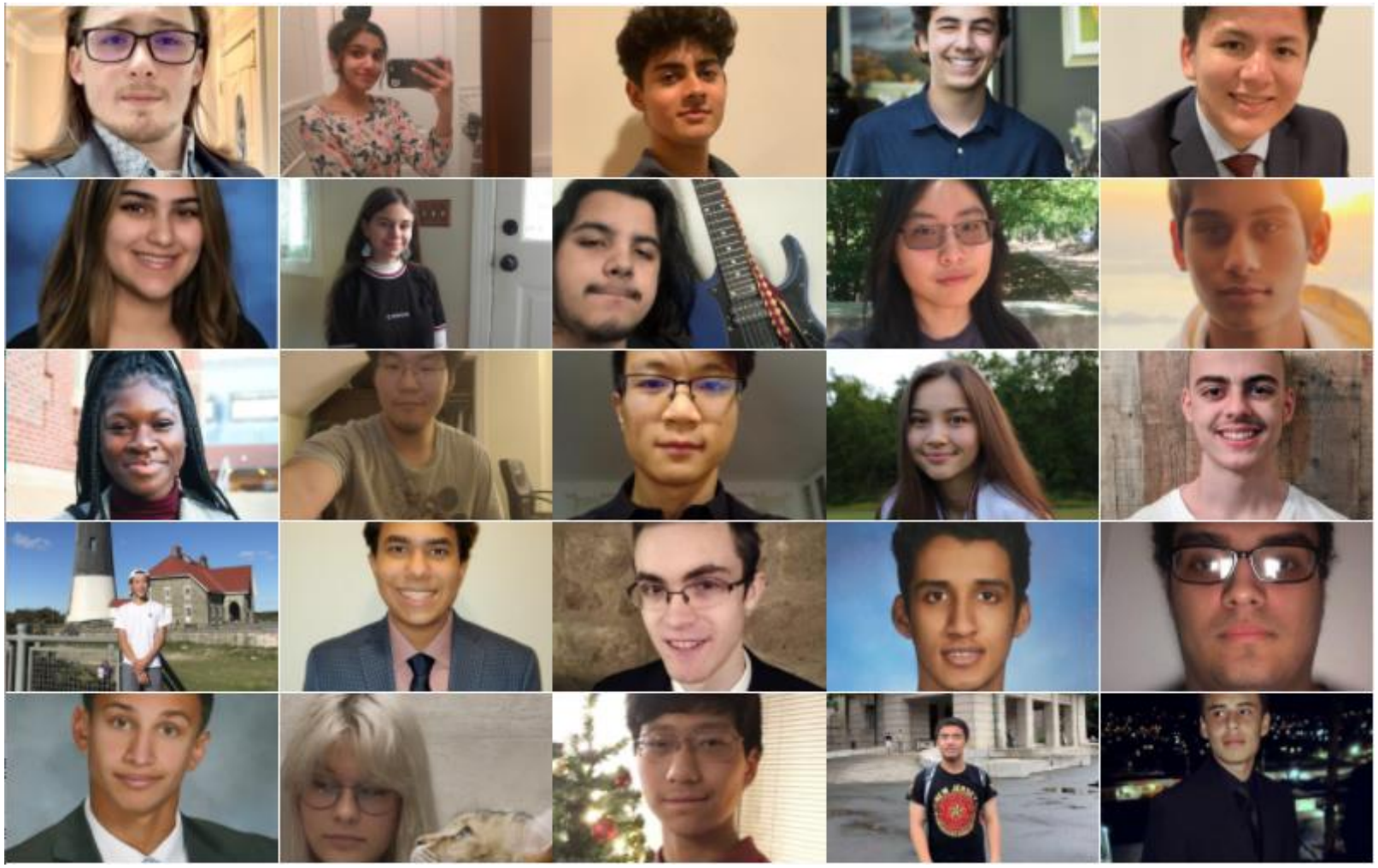
Reviewed for and while loops

Class Content

Video Link click here

课后报告

600+老师遍布全美



STAR Teacher

teacher list

International

对家长的承诺：3个保证

- 换老师
- 换班级
- Refund（remaining classes）

教师守则

1. 言行文明，言传身教，教书育人。

2. 热爱学生，努力提高孩子们学习 Coding 的兴趣，调动学生学习的积极性，教学中既要做到生动活泼，又要保证课堂纪律。

3. 教学大纲：https://school.thinkland.ai/outline.jpg。
具体课程安排： https://school.thinkland.ai/curriculum.pdf
老师教学计划参见教学平台上老师页面：https://school.thinkland.ai/

4. 认真备课，认真教书，认真批改作业（如果课程有作业要求）。

5. 教师应当提前五分钟进教室，做好准备工作。按时上课，按时下课。上课必须考勤，在上课开始后提交出勤报告。如果无故迟到，扣 1 分。

6. 每次课后要给每个学生写课后小结，经常保持和家长的联系，了解学生的课外情况。同时发挥家长的能动作用，协助搞好教学工作。如果没有填写课后报告，那在系统里就没有上课信息。

7. 因故不能到校授课，尽量提前通知学校，给校方充分的时间寻找代课教师。授课当天如发生意外，不能按时赶到学校，应及时通知学校。如果无故缺课，扣 3 分。

8. 如因故不能继续教学，应该至少提前两周告知学校，以便学校进行教师安排和调整。辞职请提前通知学校。

9. 严格遵守学校的规章制度，不能利用工作之便做任何商业活动。

10. **如果扣分到 6 分，或学校认为你不能符合继续教课的要求，学校有权力替换上课老师。**

中文学校AI课程已经开展多年

Thinkland.AI是一家全国性的专门提供青少年AI编程课程的教育服务提供商，是全美中文学校协会 (CSAUS) 唯一的计算机科学和AI课程提供商，CASUS有遍布全美的几百家会员学校。我们很自豪能够为社区提供服务。
- https://www.csausschool.org/course

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AI课程安排和报名

报名链接：
https://school.thinkland.ai/schedule

关于Mike

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