

# Computer Programming/AIoT Curriculum

## 为什么你要学习编程和人工智能物联网？

### Why should you study AIoT and Programming?

因为智能物联技术将是我们建设未来的基本知识和技能。因为人工智能是第四次工业革命的核心所在。AI会影响每个人！无论是国内的巨头BAT，还是国外的GAFA，都强调AIoT的重要性。这就是为什么你应该对AIoT有个初步全面的了解，哪怕是你对自己的职途还不那么清晰明了的时候。通过这个课程，相信你会对自己是否选择AIoT方向为职途会有更清晰的想法。

Our society is progressing towards the 4th Industrial Revolution, and the importance of artificial intelligence and it's impact on all aspects of our life has become at the forefront of new innovation and technology. AI will become integral across all disciplianries and students must become knowledgeable and familiar with the language of AI through AIoT (Artificial Intelligence of Things) and Programming as we progress towards this new era.

## 你会学到什么？

### What you will learn?

我们这个课程与传统的教学有相当大的不同，我们称为Project Based Learning, 以项目为导向的学习。我们设计的课程，让你从一开始，就动手参与到贯穿整个课程的项目中来，在这个过程中你会学习互联网、计算机、Python编程，人工智能、物联网、大数据、云技术等一系列技术。在这个课程的学习中，因为项目常常是团队项目，除了你会学习到技术基本技能，你还会学到如果独立完成工作，如何塑造你的团队精神，以及如何培养你的领导力。

Our courses are taught quite different from those of the traditional classroom setting. We use a "Project Based Learning" pedagogy in which student have the opportunity to work in hands-on projects from the beginning. Through this learning methodology, students will learn Internet, Computer, Python programming, AI, IoT, Big Data, Cloud technogy, etc. Often, projects will involve collaboration amongst students. Through this, students will learn the valuable lessons of teamwork, while honing their leadership skills.

# Computer Programming/AIoT Curriculum

Course	Grade	Schedule	Tuition	
Coding: Java Basic	3 <sup>rd</sup> to 7 <sup>th</sup>	TBD/Friday: 6:00pm-7:30pm	\$780	<input type="checkbox"/>
Coding: Java Advanced	7 <sup>th</sup> to 12 <sup>th</sup>	TBD/Friday: 7:30pm-9:00pm	\$850	<input type="checkbox"/>
Coding: Python Basic	3 <sup>rd</sup> to 7 <sup>th</sup>	TBD/Saturday: 6:00pm-7:30pm	\$780	<input type="checkbox"/>
Coding: Python Advanced	7 <sup>th</sup> to 12 <sup>th</sup>	TBD/Saturday: 7:30pm-9:00pm	\$850	<input type="checkbox"/>
Internet of Things	8 <sup>th</sup> to 12 <sup>th</sup>	TBD/Sat: 3:30pm-5:00pm	\$1600	<input type="checkbox"/>
Introduction of AI	8 <sup>th</sup> to 12 <sup>th</sup>	TBD/Sat: 5:30pm-7:00pm	\$1600	<input type="checkbox"/>

Java Basic		Java Advanced		Internet of Things	
Week 1	Breaking the Surface	Week 1	Getting Started	Week 1	Introduction to IoT: Layer Structure
Week 2	A Trip to Objectville	Week 2	Growth of Functions 1	Week 2	Introduction to IoT: Hardware and Software
Week 3	Know Your Variables	Week 3	Growth of Functions 2	Week 3	Programming Fundamental 1
Week 4	How Objects Behave	Week 4	Divide and Conquer 1	Week 4	Programming Fundamental 2
Week 5	Extra-Strength Methods	Week 5	Divide and Conquer 2	Week 5	Programming Fundamental 3
Week 6	Using the Java library	Week 6	Probabilistic Analysis and Randomized Algorithms 1	Week 6	Blinking LED Light 1
Week 7	Better Living in Objectville	Week 7	Probabilistic Analysis and Randomized Algorithms 2	Week 7	Blinking LED Light 2
Week 8	Serious Polymorphism	Week 8	Heapsort 1	Week 8	Blinking LED Light 3
Week 9	Life and Death of an Object	Week 9	Heapsort 2	Week 9	Introduction to API
Week 10	Numbers Matter	Week 10	Quicksort 1	Week 10	Mini Weather Forecaster 2
Week 11	Risky Behavior	Week 11	Quicksort 2	Week 11	Mini Weather Forecaster 2
Week 12	A Very Graphic	Week 12	Sorting in Linear Time 1	Week 12	Stock Price Tracker 1
Week 13	Work on Your Swing	Week 13	Sorting in Linear Time 2	Week 13	Stock Price Tracker 2

Python Basic		Python Advanced		Introduction to AI	
Week 1	Magic tool to solve real life problem: Introduction to Programming	Week 1	Image Resizing and Seam carving 1	Week 1	Introduction to AI: Technology and Application
Week 2	Calculations and Variables	Week 2	Image Resizing and Seam carving 2	Week 2	Math Behind AI
Week 3	Strings, Lists, Tuples and Maps	Week 3	Analysis & Big-O 1	Week 3	Programming Fundamental 1
Week 4	Drawing with Turtles	Week 4	Analysis & Big-O 2	Week 4	Programming Fundamental 2
Week 5	Make Your Judgement: If and else	Week 5	Analysis & Big-O 3	Week 5	Programming Fundamental 3
Week 6	Going Loopy	Week 6	Expanding Stacks & Queues 1	Week 6	Machine Learning: Classification 1
Week 7	Classes and Objects	Week 7	Expanding Stacks & Queues 2	Week 7	Machine Learning: Classification 2
Week 8	Python's Built-in Functions and Useful Modules	Week 8	Recursion, Induction 1	Week 8	Machine Learning: Classification 3
Week 9	Better Graphics	Week 9	Recursion, Induction 2	Week 9	Machine Learning: Classification 4
Week 10	Make Your First Game	Week 10	Dynamic Programming 1	Week 10	Machine Learning: Neural Networks 1
Week 11	Make a Real Game 1	Week 11	Dynamic Programming 2	Week 11	Machine Learning: Neural Networks 2
Week 12	Make a Real Game 2	Week 12	Hashing, Sets, Dictionaries 1	Week 12	Machine Learning: Neural Networks 3
Week 13	Make a Real Game 3	Week 13	Hashing, Sets, Dictionaries 2	Week 13	Machine Learning: Neural Networks 4