



7 BILLION PEOPLE

200 COUNTRIES

ALL PRODUCING DATA

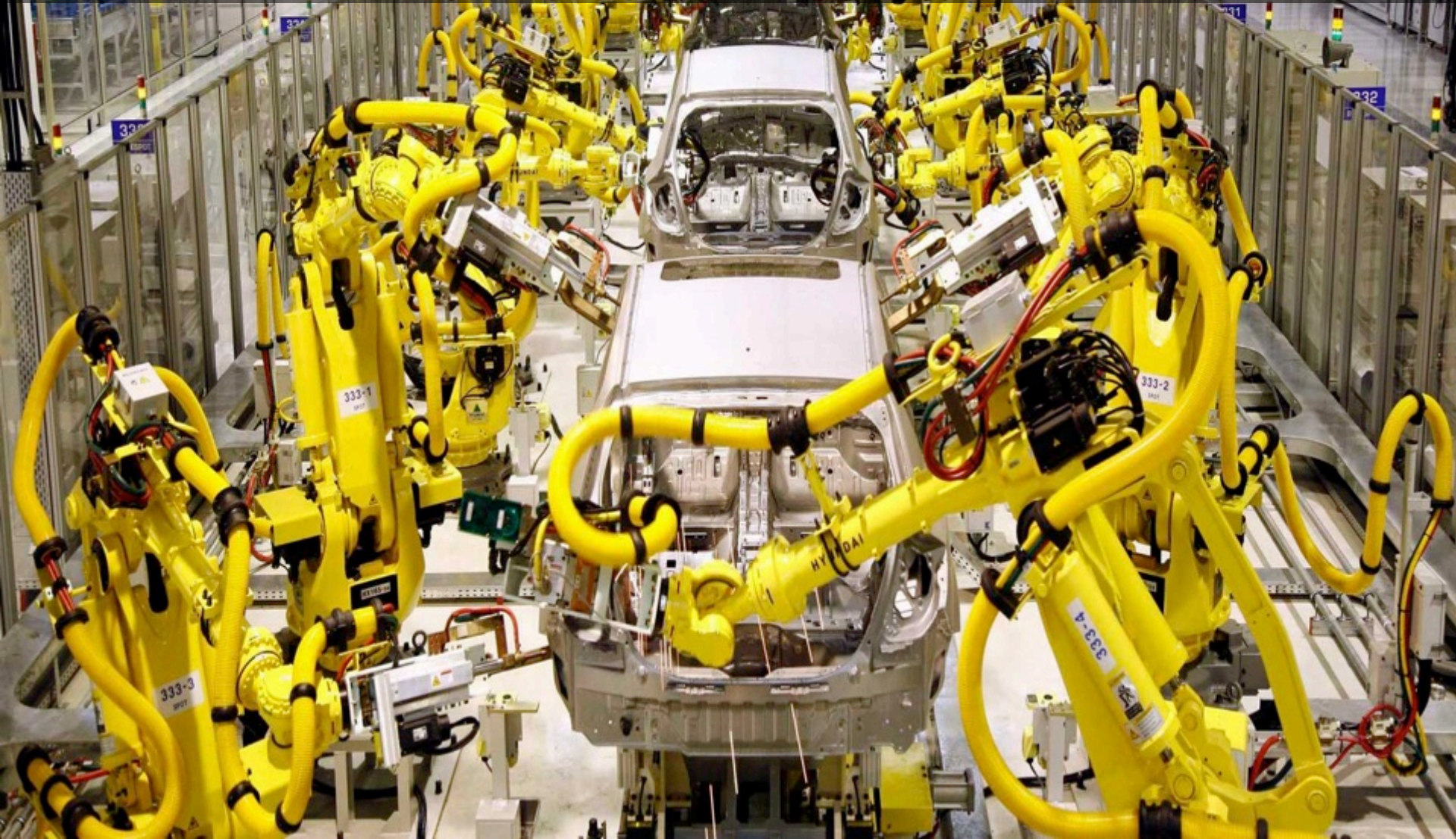
Engineering Computation
& Data Science

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Massachusetts Institute of Technology

Rise of Systems & Data



More Systems & More Data





 **STORM ADVISORY**
5 HRS REMAINING

12 PM	1 PM	2 PM	3 PM	4 PM
73°	72°	68°	63°	62°

STORM DIRECTION

4" EXPECTED RAINFALL

Everywhere



Abstractions for Building Software Systems Have Risen

A person wearing a white helmet, dark jacket, and orange gloves is walking on a snowy mountain peak. The background shows a vast, rugged mountain landscape under a cloudy sky. The person is holding a climbing tool in their right hand.

New normal: A Single Person can
Build a Complex Software System



New normal: A Small Team can
Challenge an Industry

Cloud
Computation

Data
Science

IIOT

Machine
Learning

PILLARS



WEB



DEVICES



DATASCIENCE



SECURITY



COMPUTATION



VISUALIZATION



MACHINE LEARNING



CLOUD

1.00 Engineering Computation & Data Science

John R. Williams, Abel Sanchez, Lecture: MWF 9:30-11 (1-390)

[Home](#)[Lectures](#)[Homeworks](#)[Labs](#)[Videos](#)[About](#)

Engineering Computation and Data Science

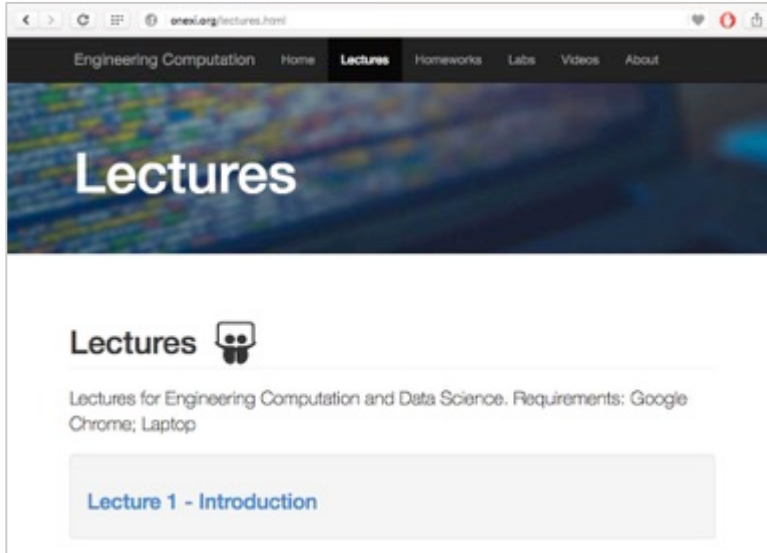
Introduces the fundamentals of computational thinking and data science in engineering computation.

[Learn more](#)

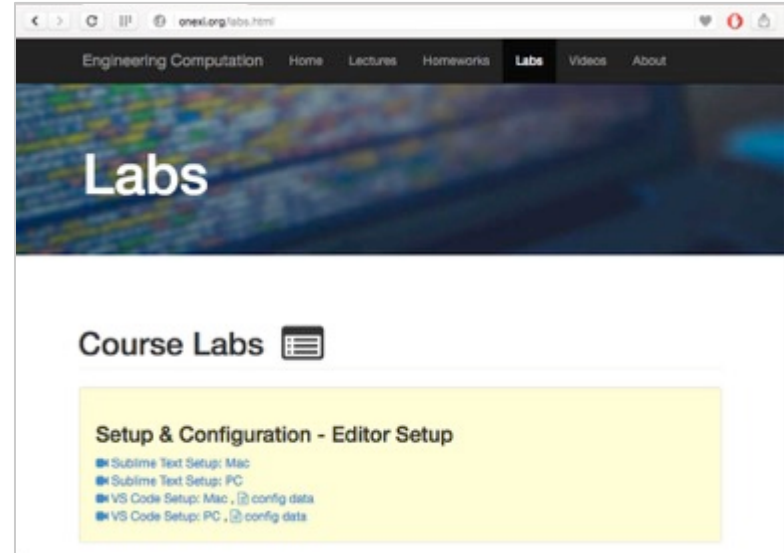
Requires Google Chrome, Course by Abel Sanchez and John Williams

<http://onexi.org>

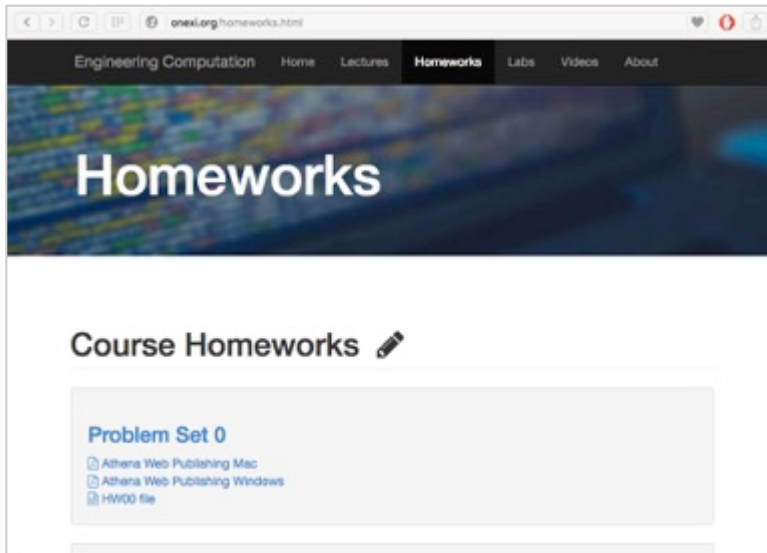
All Content Online, <http://onexi.org>



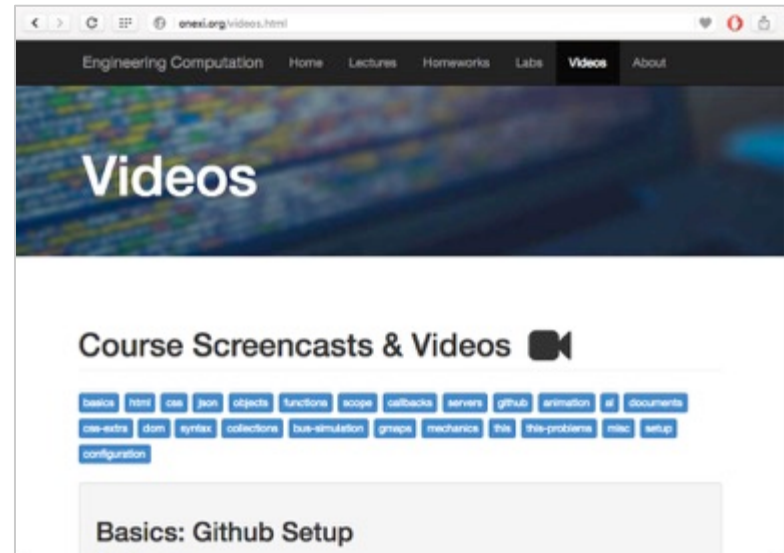
The screenshot shows the 'Lectures' page of the onexi.org website. The header includes a navigation bar with 'Engineering Computation', 'Home', 'Lectures' (active), 'Homeworks', 'Labs', 'Videos', and 'About'. The main heading is 'Lectures' with a small icon of two people. Below it, a paragraph states: 'Lectures for Engineering Computation and Data Science. Requirements: Google Chrome; Laptop'. A light blue button labeled 'Lecture 1 - Introduction' is visible at the bottom.



The screenshot shows the 'Labs' page of the onexi.org website. The header includes a navigation bar with 'Engineering Computation', 'Home', 'Lectures', 'Homeworks', 'Labs' (active), 'Videos', and 'About'. The main heading is 'Labs' with a small icon of a document. Below it, a yellow box contains the text 'Course Labs' followed by a list of setup instructions: 'Setup & Configuration - Editor Setup', 'Sublime Text Setup: Mac', 'Sublime Text Setup: PC', 'VS Code Setup: Mac , @ config data', and 'VS Code Setup: PC , @ config data'.



The screenshot shows the 'Homeworks' page of the onexi.org website. The header includes a navigation bar with 'Engineering Computation', 'Home', 'Lectures', 'Homeworks' (active), 'Labs', 'Videos', and 'About'. The main heading is 'Homeworks' with a small icon of a pencil. Below it, a light blue box contains the text 'Course Homeworks' followed by a list of homework assignments: 'Problem Set 0', 'Athena Web Publishing Mac', 'Athena Web Publishing Windows', and 'HW00 file'.



The screenshot shows the 'Videos' page of the onexi.org website. The header includes a navigation bar with 'Engineering Computation', 'Home', 'Lectures', 'Homeworks', 'Labs', 'Videos' (active), and 'About'. The main heading is 'Videos' with a small icon of a video camera. Below it, a light blue box contains the text 'Course Screencasts & Videos' followed by a list of video topics: 'basics', 'html', 'css', 'json', 'objects', 'functions', 'scope', 'callbacks', 'servers', 'github', 'animation', 'ai', 'documents', 'css-extra', 'dom', 'syntax', 'collections', 'bus-simulation', 'grape', 'mechanics', 'this', 'file-problems', 'misc', 'setup', and 'configuration'. A light blue button labeled 'Basics: Github Setup' is visible at the bottom.

Class Template

Class Prep



Mini Lectures



Active Learning





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