

Great Leaders Always Evolve



Engineer a Personal and Organizational Transformation

Today's revolutionary reinvention of companies through AI requires creative technical leadership. This summer, technologists charged to build the *cognitive enterprise* will meet in Caltech CTME workshops and labs to acquire hands-on experience in machine learning and deep learning. Ready to ignite your career?

**Deep Learning with
Google TensorFlow**
Accelerated Learning Lab

Summer Starts 13 Jul 19
Fall Starts 05 Oct 19
In-Person or Live-Online

**Advanced Analytics: Machine
Learning with R & Python**
Certificate Program

Summer Starts 03 Aug 19
Fall Starts 02 Nov 19
In-Person or Live-Online

Caltech

Center for Technology & Management Education

Custom programs for the science and technology-based enterprise

Deep Learning with Google TensorFlow

Accelerated Learning Lab

► ctme.caltech.edu/deep-learning

Format: 3-Day, Open-Enrollment; 2.4 CEUs
Delivery: Instructor-Led In-Class / Live-Online
Summer 2019: Jul 13, 20, 27
Fall 2019: Oct 5, 12, 19

Deep Learning uses neural network architectures to solve highly complex learning problems as diverse as training autonomous vehicles or object recognition. New applications are being found every day across manufacturing, pharmaceutical, medical, security, transportation, aerospace, government, academia, and other sectors.

Learn the fundamental concepts of neural networks and deep learning. Examine TensorFlow hands-on through Python as we investigate ML modeling methods for estimation and classification, as well as explore GPU and TPU architectures.

Program locations:

California Institute of Technology
Center for Technology & Management Education
Powell-Booth Laboratory for Computational Science
1200 E California Blvd, Pasadena, CA 91125

About Caltech

Caltech is a world-renowned science and engineering institute that marshals some of the world's brightest minds and most innovative tools to address fundamental scientific questions and pressing societal challenges. Caltech prizes excellence and ambition. The contributions of Caltech's faculty and alumni have earned national and international recognition, including 39 Nobel Prizes. The Institute manages the Jet Propulsion Laboratory (JPL) for NASA.

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To customize this program for your organization, contact a program advisor. 626.395.4042
ctme@caltech.edu ctme.caltech.edu

Advanced Analytics: Machine Learning with R and Python

Certificate Program

► ctme.caltech.edu/adv-analytics

Format: 6-Day, Open-Enrollment; 4.8 CEUs
Delivery: Instructor-Led In-Class / Live-Online
Summer 2019: Aug 3, 10, 17, 24 / Sep 7, 14
Fall 2019: Nov 2, 9, 16, 23 / Dec 7, 14

Analytics uses the semantics of data to find meaningful patterns and knowledge and predict future trends. Machine learning applies these concepts to large sets of data associated with customers, business processes, and market economics.

This technical program covers the underlying principles related to a wide variety of machine learning methods and algorithms plus the various procedures used to assess their validity in different applications. Participants will apply machine learning languages R and Python to select, build and use predictive models, and visualization tools for R (ggplot2) and Python (Matplotlib, Seaborn).

INSTRUCTOR

Dr. Ash Pahwa is an educator, author, entrepreneur, and technology visionary with three decades of industry and academic experience. He has founded several successful technology companies. His expertise includes machine learning, deep learning, digital image processing, and database management. Dr. Pahwa has worked for General Electric, AT&T Bell Laboratories, Xerox Corporation, and Oracle.

Dr. Pahwa earned his doctorate in Computer Science from the Illinois Institute of Technology in Chicago. He is listed in *Who's Who in the Frontiers of Science and Technology*.

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Programs, dates, fees, and instructors are subject to change.

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