



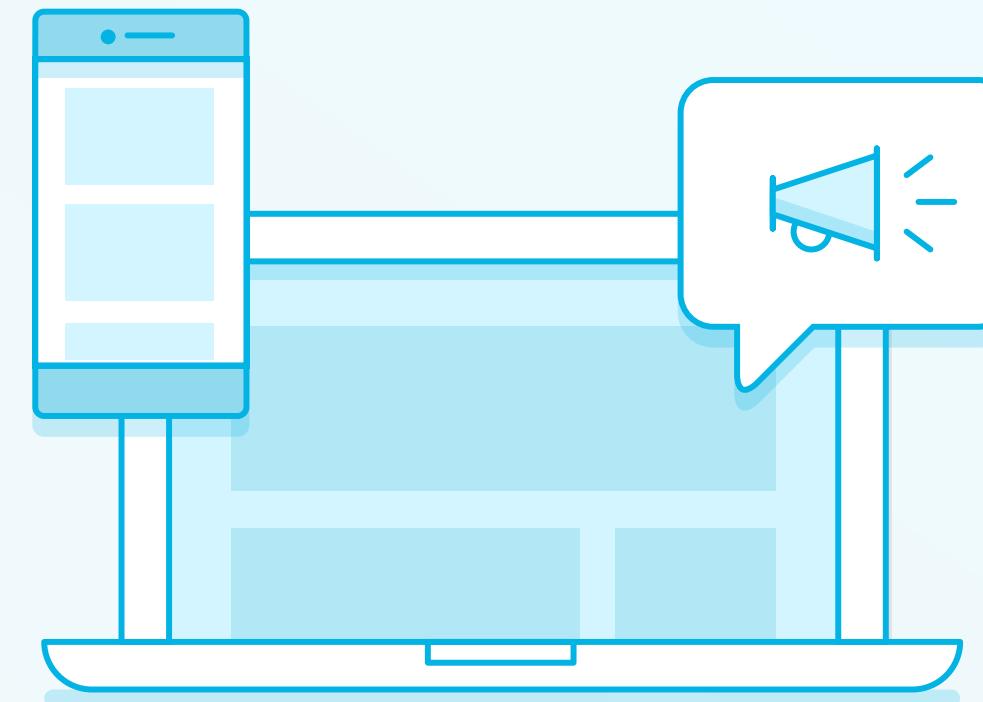
A person wearing a KUKA robotic suit stands in front of a large, intricate circuit board pattern. The suit is primarily white with orange and grey accents, and the KUKA logo is visible on the chest. The background is a dense grid of grey and white circuit board tracks.

Udacity

ROBOTICS

NANODEGREE PROGRAM

Student Welcome Handbook



Welcome to the Robotics Nanodegree Program! Enrolling was just the first step. You are about to embark on your journey to join the ranks of some of the world's best robotics engineers. Upon completing the program, you will be on your way to working alongside the forerunners in this exciting field. To prepare you for success, we have compiled essential information in this digital handbook.

Congratulations on enrolling!

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Meet the Team



Sebastian Thrun

Udacity, President

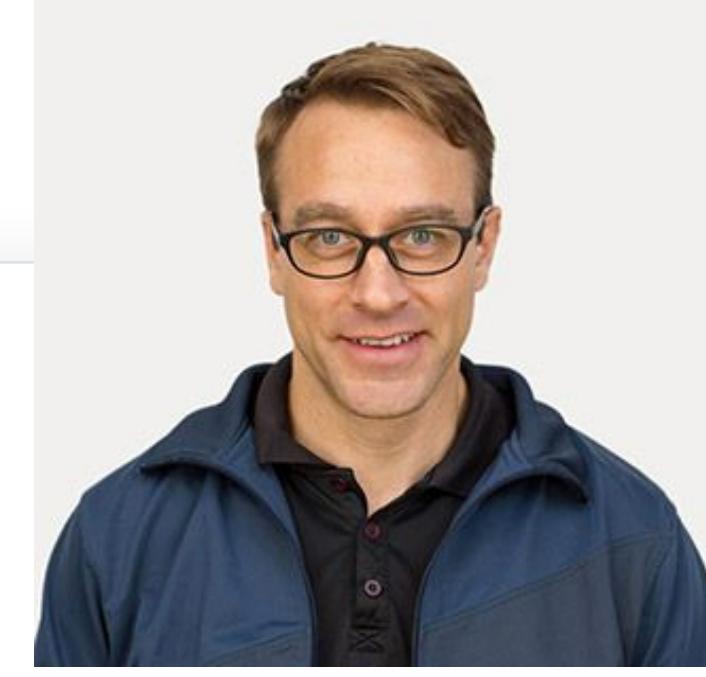
Scientist, educator, inventor, and entrepreneur, Sebastian led the self driving car project @ Google X and founded Udacity, whose mission is to democratize education by providing lifelong, on-demand learning to millions of students around the world.



Chris Lei

Instructor

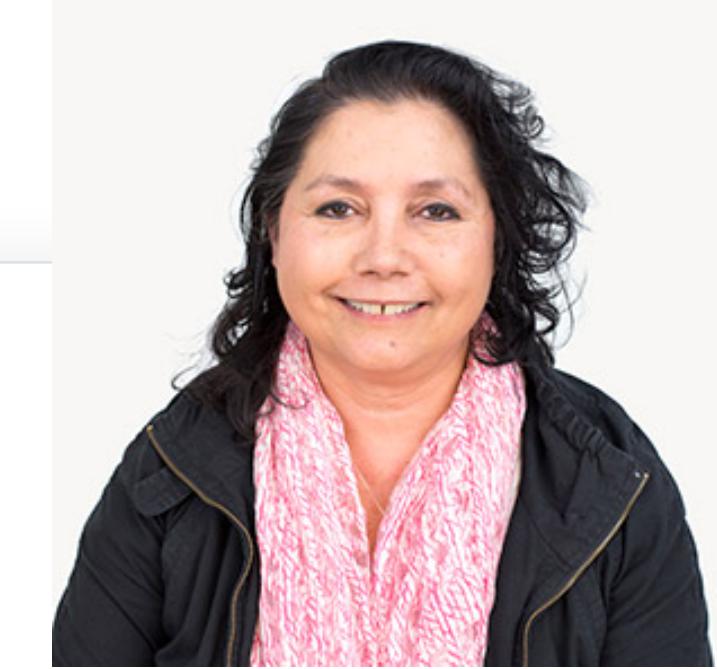
Curriculum Lead for the Android and Android Basics Nanodegree Programs at Udacity, Chris is inspired and humbled by all who embrace computing as a medium to realize their dreams. He holds an M.S in Embedded Systems and a B.S in Computer Engineering.



Ryan Keenan

Instructor

Ryan has a PhD in Astrophysics and a passion for teaching and learning. He is also one of the lead instructors in the Self-Driving Car Nanodegree Program. When he's not building Udacious robotics lessons, you'll find him up in the mountains or out in the surf.



Catherine Gamboa

Instructor

Catherine Gamboa has an M.S and B.S. in Electrical Engineering with concentrations in Digital design and computer architecture. She is also one of the instructors in the world-renown Georgia Tech Masters of Computer Science program.

Meet the Team

**Daniel Reuter**

Electric Movement, CEO

Daniel is driven to advance global electrification and energy efficiency through automation. He directs internal and external robotics and self-driving car projects. In his spare time, he plays lead trumpet in several jazz bands.

**Brandon Kinman**

Electric Movement, CTO

A graduate of UC Santa Cruz with B.S/M.S in Computer Engineering, Brandon has a true love for learning. He has worked for a number of companies, and has pursued interests in a variety of diverse areas ranging from robotics to coffee roasting.

**Harsh Pandya**

Electric Movement, SWE

With a Masters in Robotics & Computer Vision, Harsh has worked on various aspects of robotics; from mobile robots and manipulators to Self-Driving cars. When he is not planning for world domination using robots, he can be found enjoying video games.

**Thomas Johnston**

Electric Movement, SWE

Thomas holds a Ph.D. in Biomedical Engineering from UC Davis. His areas of expertise include simulation of multibody dynamical systems, bipedal robotics, and applied machine design. He works as a robotics software engineer at Electric Movement.

Our Partners

We are thrilled to have as hiring partners these leading-edge companies that will fast track graduates for job consideration at their companies:



Your Resources

Live Help

Each Robotics Nanodegree Program student will have access to Udacity's In-Classroom Live Help. This tool will allow you to get immediate answers to your questions about the course content, as well as help with your projects.

With Live Help you'll be able to:

- Get help from our mentors without even leaving the classroom.
- Have your technical questions answered immediately, in real time.

Find Live Help in the Classroom

The screenshot shows the Udacity Classroom interface. On the left, there's a sidebar with a navigation menu:

- Lesson 1: Introduction to Computer Vision
- 1. Introduction (marked with a checkmark)
- 2. Open CV
- 3. Quiz
- 4. Filters
- 5. Edge Detection
- 6. Homography
- 7. Project

Below the sidebar, a message says "Stuck on Something? Find an expert right away." with a "LIVE HELP IN PROGRESS" button.

The main area displays a video of Sebastian Thrun, Founder, UDACITY. The video player shows the title "Sebastian Thrun", the duration "0:11 / 1:38", and a "LIVE HELP" button.

A "LIVE HELP" chat window is open on the right side of the video player. It shows a message from "Andy" at 10:20PM: "My Own Networking Class: project.zip 2 mb". Below it, a message from "Clifton" at 10:20PM: "Hi Clifton! To answer your question, you're allowed to use a networking library. It will help you finish your project much faster." A red arrow points from the text "Click your Live Help chat window to expand it and chat with one of our mentors any time." to the "LIVE HELP" button in the video player.

Introduction
Published on Aug 1st, 2017 • Instructor: Sebastian Thrun
Welcome to Lesson 1, Introduction to Computer Vision! In this lesson, you'll learn the core foundations to lidar and computer vision for your vehicle that allows it to be aware of its surroundings and make decisions based on data sets!

Click your Live Help chat window to expand it and chat with one of our mentors any time.

Slack Community

Slack is a messaging tool that allows you to communicate with a community of robotics enthusiasts in real-time. When you join the Udacity Robotics Nanodegree Program's Slack, you will meet fellow students and robotics industry professionals from around the world!

Slack is also the medium used for discussions and supplementary materials. Here you will have the opportunity to participate in cutting-edge research discussions, learn how to build various projects, and even see interviews with robotics CEOs in which they answer community questions!

Join the [Slack team](#). Once you have signed into the community, introduce yourself on the **#introductions** channel.

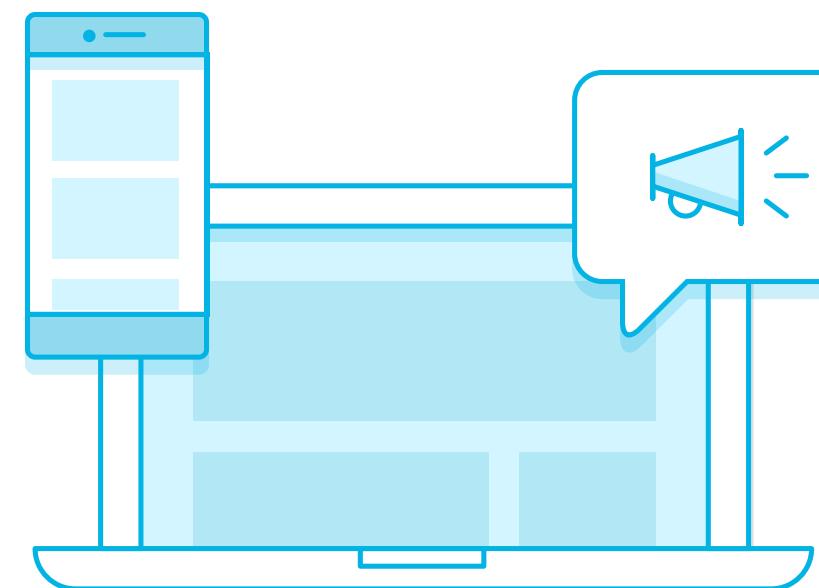
For some best practices and guidelines on how to use Slack, check out the Robotics Slack

Support

Reach out anytime. Udacity has dedicated support for the Robotics Nanodegree program.

For *curricular content or project related questions*, please reach out to a mentor via the Live Help feature in your Classroom.

For *non-curricular, technical issues and/or enrollment issues*, e.g., related to your account or the tools provided for the projects, email **robond-support@udacity.com**.



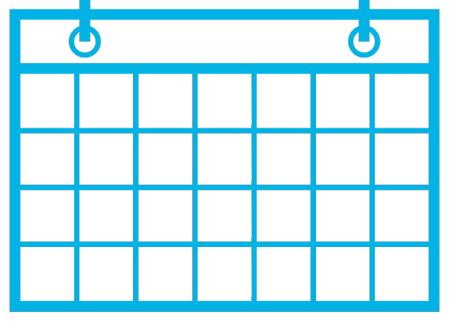
Getting help – Summary

Channel	How to use
Live Help	Personal 1:1 help right in the classroom; live chat means an immediate response!
<u>Slack</u>	Interact with your fellow Robotics students – collaborate, support and inspire each other. Important announcements are posted in the #udacity_announcements channel.
Support email: robond-support@udacity.com	Email our support team if you experience technical issues, e.g., when you cannot access the classroom or the tools we provide you, or issues with your enrollment.

What to expect

See our full [**Robotics Nanodegree FAQ**](#) and [**general Udacity FAQ**](#).

Class Timeline | Pacing



Project Deadlines

The deadlines you see in your classroom are suggestions for when you should ideally pass each project. Please note that you can submit your project as many times as you need to, and there are no penalties if you miss these deadlines. However, you will be at risk of falling behind and not passing all projects on time if you miss these deadlines. It is a recommended best practice to meet each suggested deadline.

Term Deadlines

In order to graduate a term, you must submit all projects by the last day of the term and pass all projects once they are reviewed by a Udacity Reviewer (the review may take place after the last day of the term). Passing a project means a Udacity Reviewer has marked a project as "Meets Specifications."

Class Timeline | Time Dedication



15 HOURS / WEEK

The Admission Team believes you to be a strong candidate to build a career within Robotics. Between instructional content, quizzes, projects, and other course-related activity, we estimate that investing **15 hours/week** will enable you to proceed through the program at a successful pace so long as you have met the prerequisites.

Content | Curriculum



The Udacity Robotics Nanodegree Program is unlike any other program in the world. You'll receive "**Learning** Content" every three weeks that will prepare you for completing projects. Projects are industry-driven and aligned with skills needed to demonstrate mastery in today's fast-paced robotics workforce. Remember - you'll have the benefit of having live-help tutors on-demand whenever you need them, so when the going gets tough, don't be afraid to reach out for guidance. In between the "**Learning** Content" releases - you'll be immersed in Udacity's "**Connection** Content" where you'll be invited to participate in live Q&A's, code reviews, design reviews, challenges, "day-in-the-life's", careers outlooks and industry insights - all tailored to keep you in the know about what's happening within the field.

Class Timeline | Deadlines

There are two components to deadlines:

1. **Deadline for passing all projects:** a Udacity Reviewer has marked your project as "Meets Specifications." In order to graduate a term, *you have to pass all projects by the last day of the term.*
2. **Suggested deadlines for projects:** The deadlines you see in the classroom are suggestions for when you should pass your project by. There are no penalties if you miss these deadlines. However, you will be at a severe risk of not passing all projects on time if you miss these suggested deadlines.

Class Timeline | Missing Deadlines

Our coaches and mentors will work directly with any students who are struggling with the timeline requirements. Our ultimate goal is to ensure that every single student accepted into the program successfully graduates.

If you do not complete all projects by the end of the term, you will not qualify for graduation, lose access to the classroom, not be eligible for career services, or events with hiring partners. You will be removed from the program and will need to re-enroll if you would like to continue. Upon re-enrollment, students will be responsible for paying for the necessary costs.

What to Expect After Graduation

CAREER SERVICES

Our hiring partners for the Robotics Nanodegree are Bosch, Electric Movement, iRobot, Kuka, Lockheed Martin, Uber ATG, and X, Alphabet's Moonshot Factory. Begin by keeping your Udacity profile up to date and turning on recruiter access. [Read more about career services here.](#)

STUDENT WORK OPPORTUNITIES

Opportunities include paid positions as mentors, content creators, and more. [Get in touch with us if you would like to participate.](#)

ND Prep | RoboTek



Want to check your prerequisites one final time - or encourage friends to see if they've got the background necessary to become a roboticist? We've auto-enrolled you in the [companion comic!](#)

Policy

COST

The Robotics Nanodegree program consists of two terms. Each term is \$1200.

REFUND

Students have a 7-day window from the day they receive access to the program (the first day of the term) to un-enroll and request a refund. To request a refund, email robond-support@udacity.com.

SWITCHING COHORTS

Students have a 7-day window from the day they receive access to the program (the first day of the term) to request to switch cohorts. To request a cohort switch, email robond-support@udacity.com.