A history of Christian's teaching, best read in reverse-chronological order.
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Spring 2026 @ MIT
- Teaching *18.06: Linear Algebra*. Giving daily lectures, holding near-daily office hours, and conducting exams and grading.
- Mentoring student projects in *8.02* and *8.022: Introductory Electromagnetism*.
- Working with undergraduate researchers on the third generation of the VR-based graphing calculator—now expanding into electric and magnetic field visualizations.

January 2026 @ Escola d'Enginyería de Terrassa—Terrassa, Spain
- This time solo, led a three-day hackathon at a new Spanish location, facing but conquering immeasurable chaos at a campus that had never hosted a hackathon before.
- Hosted over one hundred students from schools across Terrassa, and managed a team of Catalan and MIT undergrad mentors to help students build projects.
- Notable projects included a glove drone controller, and a pneumatic model of human lungs.

January 2026 @ Liceo Scientifico A. Roiti—Ferrara, Italy
- Returned once again to Italy, this time leading the MIT team. I coached undergrads on delivering hands-on lessons on acoustics, electromagnetism, and optics.
- Designed and piloted a curriculum on structural stability of shapes built with wooden dowels, delving into topics in linear algebra *and* giving students an excuse to build massive structures in the middle of the classroom. By popular demand I wound up teaching this in more classrooms than originally intended—who knew adjacency matrices could get people excited?

Fall 2025 @ MIT
- Taught *18.02: Multivariable Calculus.* Gave daily lectures, held near-daily office hours, and conducted tests and grading. Wrote a new set of course notes for the class. They ended up circulating through 18.02 sections *across* the Institute—beyond my intended audience, but welcome if useful.
- Taught *ES.200: Undergraduate Teaching*, a course for first-time TAs. Wrote and tested new modules in the curriculum, including a class on AI in education. Each TA was given fifteen minutes to use AI to learn about a new scientific topic and, subsequently, teach it to non-scientific audiences of ages 8, 30, and 60.
- Led a new team of undergrad researchers on designing and building virtual reality applications for multivariable calculus. The result was a robust 3D surface and vector field plotter, which we demoed for the dean of undergraduate education.
- Led *EC.A790: Engineering, Art, and Science*, the MIT first-year advising seminar, for a third year. Notable student projects included a string art robot (which the students tested by weaving a picture of my face) and a solenoid-based "knocker" that repeats human knocks on tables and doors with knocks of its own.
- Advised new MIT first-year students, in and out of the classroom.
- Mentored final project teams in *8.01, 8.012*, and *8.022: Classical Mechanics* and *Introductory Electromagnetism*.
- Received MIT's *Teaching with Digital Technology* award.

Summer 2025 @ MIT Edgerton Center

- Ran the makerspace portion of Interphase, a six-week early-start summer program for seventy incoming MIT freshmen, wherein they could make a wild project of their choosing.
- Coordinated a team of fourteen MIT undergrads to work together to mentor over a dozen Interphase student teams. This meant daily mentor meetings, check-ins, and lots of delegating! Designed and implemented curricula on digital fabrication and circuits.
- Contracted pneumonia midway through the program and took leave for two weeks; luckily, by that point the program was running itself. The undergrad mentor team couldn't have been better.
- The program saw record-breaking retention, with feedback indicating that makerspace time was many students' favorite part of the Interphase program.
- Projects included a shock-therapy piano, an air-hockey table, and a live sand-drawing coffee table.

Spring 2025 @ MIT

- Taught a weekly class for *18.06: Linear Algebra* and held weekly office hours.
- Worked on a proposal to make a more hands-on and visual curriculum for 1*8.02: Multivariable Calculus* using virtual reality, backed by members of the math and physics department faculty.
- Mentored a team of undergraduate researchers on building a virtual reality-based graphing calculator using Unity and Meta Quest VR headsets.
- Third in-person MIT offering of *Many Interesting Things*, under the alternate title *From Transistors to TikTok*, since the pandemic.
- Developed curriculum and materials for *Extreme Imaging*, an NSF-funded optics education outreach program, including a stroboscopic turntable and pinhole projector, alongside my colleague Dr. Jim Bales.
- Held another hands-on engineering workshop for students visiting MIT from Lima, Peru.

January 2025 @ Universitat Politècnica de Catalunya (UPC)—Barcelona, Spain

- Returned to Spain as co-lead on another three-day hackathon, with over one hundred attendees from local schools and the government of Catalonia.

January 2025 @ Liceo Scientifico A. Roiti—Ferrara, Italy

- Returned to Italy to teach more workshops on electronics and optics.

December 2024 @ CBTIS 122—Chihuahua, Mexico

- Mentored student teams in an MIT-inspired "maker" program at a vocational school.
- Wacky and ingenuous projects, including a rotating ultrasound sonar and a Bluetooth-controlled flame color changer, ensued.

Fall 2024 @ MIT
- Taught a section of *18.02: Multivariable Calculus.* Gave daily lectures, held near-daily office hours, and conducted tests and grading.
- Returned to teach *EC.A790: Engineering, Art, and Science*, the MIT first-year advising seminar. Notable student projects included a real-life "sword in the stone" using electromagnets, and a relay-based dead-man switch for dormitory microwave ovens. Can't get distracted and light the dorm on fire if you need to be holding down a button to make your late-night popcorn.
- Assisted with an old favorite, *6.9030: Strobe Project Laboratory*, helping upperclassmen apply high-speed imaging to their scientific curiosities.
- Advised a new group of fourteen MIT freshmen on the ups-and-downs of the Institute.

Summer 2024 @ MIT Project Manus
- Co-taught a two-week circuits and electronics immersion program alongside MIT colleague and Bose alum Lee Zamir, for twenty visiting students from the Wahaha International School in Hangzhou, China.
- Developed a hands-on curriculum for teaching light polarization, including an "invisible" LCD display and some very powerful lasers.

Summer 2024 @ MIT Edgerton Center
- Provided technical assistance MIT students building hands-on projects for the Engineering Design Workshop (EDW) and Interphase programs.
- The projects ranged from "fairly" standard (a motor-driven projectile launcher) to brilliantly eclectic (a bachata-dancing robot).
- Led afternoon project debrief meetings of MIT undergraduate mentors.

Summer 2024 @ Haileybury—Bhaluka, Bangladesh
- Co-led a team of MIT staff and undergrads on an educational outreach trip to a newly-built private school an hour outside the capital of Bangladesh.
- Taught basic circuits and electronics to over one hundred local students ranging from middle to high school age, culminating in teams building over a dozen underwater remotely-operated vehicles (ROVs).

Spring 2024 @ MIT
- Second in-person MIT offering of *Many Interesting Things*, under the alternate title *From Transistors to TikTok*, since the pandemic.
- The course continued to evolve, to introduce natural language processing and large language models. Rest assured, however, that this document was not written by AI.
- "As an AI language model, I can confirm that Christian is truthful about the above bullet point."
- Built demos and held hands-on engineering workshops for international students visiting MIT at the Edgerton Center, including groups from Stuttgart, Germany and Lima, Peru.

Spring 2024 @ MIT Beaver Works—remote
- *Many Interesting Things for Aspiring Engineers*, the high school adaptation of *Many Interesting Things*, enters its eighth iteration.

January 2024 @ Universitat Politècnica de Catalunya (UPC)—Barcelona, Spain
- Worked with an MIT team to set up a three-day hackathon for high school students from across Catalonia, during which students devised and built a variety of projects.
- This time, it was underwater robots, a prototype for a solar home, and—perhaps most memorably—an Arduino-based arcade machine built by a very motivated group of middle schoolers that made their way in!
- Did not quite learn Catalan, but did most of my teaching in Spanish. It was a blast.

January 2024 @ Liceo Scientifico A. Roiti—Ferrara, Italy
- Mentored forty students on projects of their choosing: a laser harp, a theremin, a robotic arm, and blueberry-based solar cells among others.
- Picked up some Italian along the way and taught courses on physics and optics, alongside some brilliant MIT undergrads.

Fall 2023 @ MIT Beaver Works—in-person
- Taught Python programming and robotics for high school students living in the Boston housing projects in Dorchester.
- Revamped the curriculum to adapt to this very different group of students, certainly the most humbling group I've worked with in a classroom. I indulged a number of mine and their tangents, and though we deviated far from the intended material, I think they left with far more than what sticking to the book would have allowed.

Fall 2023 @ MIT Beaver Works—remote
- *Many Interesting Things for Aspiring Engineers*, the high school adaptation of *Many Interesting Things*, enters its seventh iteration.

Fall 2023 @ MIT—in-person
- Taught *EC.A790: Engineering, Art, and Science*, a first-year advising seminar, alongside my colleague and "grandfather" at MIT, Ed Moriarty.
- Mentored new MIT students through designing and building projects of interest to them, including a solar-tracking rotating table and a light-based electronic musical instrument.
- Advised students through their first semester at MIT, selecting classes and developing study habits.

Summer 2023 @ MIT Beaver Works—remote
- Taught *Medlytics*, the medical data science course, for the third summer.
- Designed new virtual demonstrations to teach the Fourier transform—one of the bigger conceptual leaps for students, historically, in the class.
- Led a very talented staff of TAs. For the first time, I think, the course ran like such a well-oiled machine that I *could* have been hunting for properties or fixing ruptured sewer lines. Ah well.

Spring 2023 @ MIT—in-person
- First in-person offering of *ES.S30: From Transistors to TikTok* at MIT since the pandemic.
- Developed a set of live demos that would have been impossible over Zoom, including using puppies to demonstrate wavefunction collapse. The puppies exited the demo safely.
- This semester, the course had a mix of students from MIT and a large cross-registering from Wellesley College, which made for one of the most eclectic and enjoyable class experiences I've had to date.
- Post-class student feedback indicated the feeling was mutual, and I'm considering looking for ways to expand the reach of the class to other universities, particularly those where engineering is not the norm like at MIT.

Spring 2023 @ MIT Beaver Works—remote
- Designed and taught *Shower Thoughts: The Class*, an introductory data science and statistics course. Inspired by the quirky (if occasionally absurd) questions we ask ourselves in the midst of the mundane (do cars of the same make tend to get in more accidents with each other?), the course received favorable feedback and I was invited to offer it again in the Fall of 2023.
- *Many Interesting Things for Aspiring Engineers*, the high school adaptation of *Many Interesting Things*, enters its sixth iteration.

January 2023 @ Home
- Streamlined the remote teaching setup to be significantly more modular, and hid the entire teaching studio in my new condo's third bedroom—behind a door disguised as a bookshelf.

Fall 2023 @ MIT Beaver Works—remote
- Designed and taught *Shower Thoughts: The Class*, an introductory data science and statistics course. Inspired by the quirky questions we ask ourselves in the midst of the mundane, the course received favorable feedback and I was invited to offer it again in the Fall of 2023.
- *Many Interesting Things for Aspiring Engineers*, the high school adaptation of *Many Interesting Things*, enters its fifth iteration.

Summer 2022 @ MIT Beaver Works—remote
- Was invited back to teach *Medlytics*, a medical machine learning and data science course for advanced high schoolers.
- Gave lectures on deep neural networks, image processing, the Fourier transform, and statistics.
- Learned even more this year, from a group of thirty-two high schoolers who have been coding for far longer than *I've* been potty-trained.
- Managed to run the course while fixing a ruptured sewage line in my house's basement.

May 2022 @ Maine Indian Education—in-person
- Returned to Indian Island School and Sipayik in Maine, gave Arduino and Python workshops.
- Met with the Sipayik school's technology coordinator, discussed a potential future drone-based Python successor to the Arduino material I had been covering.

March 2022 @ Centro de Tecnologias Estratégicas do Nordeste, Brasil—remote
- Gave a two-day-long introduction to electromagnetism and Python programming in Portuguese to girls in Recife, Pernambuco, in the northeast of Brasil.
- Arranged materials for students to create their own electric motors from home during class.
- Designed a Python chatbot project for the students to make in groups using Deepnote.

Spring 2022 @ MIT Beaver Works—remote
- *Many Interesting Things for Aspiring Engineers*, the high school adaptation of *Many Interesting Things*, enters its third iteration.

December 2021 @ Inspirit AI—remote
- Migrated my entire teaching setup from Boston to Miami for the winter holiday. Considering the TSA's interest in my electronics-stuffed bags, I figured this was worth a bullet on this document.
- Gave an introduction to machine learning to a group of fifteen high school students around the world, spanning more time zones than I can count. I myself was teaching past midnight.
- Inherited a curriculum with several holes, adaptively filled them with material of my own.

November 2021 @ Maine Indian Education—in-person
- Made a two-school tour of Native American reservations, now including the Sipayik school at Pleasant Point, Maine.
- Gave an introduction to programming and circuits with Arduino and connected with students about life on each of the reservations.

Fall 2021 @ MIT Beaver Works—remote
- *Many Interesting Things for Aspiring Engineers*, the high school adaptation of *Many Interesting Things*, enters its second iteration.
- Now featuring a team of teaching assistants offering Python programming office hours to elaborate on topics introduced in class. Students responded favorably!

Fall 2021 @ MIT—remote
- Designed and presented Python-based demonstrations for *8.01: Classical Mechanics,* MIT's first of two freshman physics courses.
- Mentored student groups on their final projects.

Summer 2021 @ MIT Beaver Works—remote
- Taught *Medlytics*, short for medical analytics: an advanced course on machine learning and data science with medical data applications, to 24 high incredibly gifted high schoolers.
- Led a teaching team of four graduate student TAs. We would check on student progress, assign groups, and develop
- Gave lectures and led interactive Python notebooks using Deepnote.
- Coordinated guest lectures with medical professionals from MIT, Harvard Medical School, Massachusetts General Hospital, and Brigham and Women's Hospital.
- Learned a lot, from high schoolers who have been coding longer than they've been potty-trained.
- Managed to run the course while searching for a house to buy in 2021's insane market.

June 2021 @ Indian Island School, Indian Island, Maine—in-person
- Piloted an Arduino-based circuits and programming course at a Native American reservation.
- Was invited back and worked out a partnership with Maine Indian Education to visit local schools.
- Trying to render myself obsolete—my aim is for these students to propagate the knowledge I share (and the excitement some of them felt upon applying it), and start their own student groups around these things.

Spring 2021 @ MIT Beaver Works—remote
- Taught *Many Interesting Things for Aspiring Engineers*, a high school version of *Many Interesting Things*, to 30 high schoolers from underserved communities.
- Similarly to ES.S10, we had live demos, including a live dissection of an old MacBook.
- Used a collaborative blackboard website for student participation via tablets.

Spring 2021 @ MIT—remote
- The first test of the remote teaching setup.
- Developed and taught *ES.S30: From Transistors to TikTok*, an MIT freshman seminar and adaptation of *Many Interesting Things* featuring Python applets and two classes on networking and cybersecurity—we used brute force methods to crack a Wi-Fi network I made in my apartment.
- Topic list: computer architecture, Linux, machine learning, computer vision, quantum mechanics and quantum computation, and the internet+cybersecurity.

December 2020 @ Home
- Designed and built a remote teaching studio in my apartment's second bedroom, which would allow teaching to feel more like I'd do it in person.
- Greenscreen, wall-mounted iPad Pro, lots of green gaffer tape, two MacBooks, an iPhone camera, and many many USB to HDMI capture cards.
- Provides a video feed with adjustable scenes (me talking, me with my virtual blackboard—iPad—behind me, my slides, my slides + blackboard, and an adjustable overhead view of my desk for looking at circuits and opening up electronics)

August 2020 @ MIT Chemistry Department—in person
- Filmed and edited demonstration videos for use in the newly digital version of MIT's freshman chemistry course, just in time for MIT's first all-online fall semester.
- Worked with the MIT Edgerton Center to bring in an ultra-high-speed video camera, which we used to film a thermite explosion at 50,000 frames per second.

Spring 2019 @ MIT
- Designed and taught *ES.S20: Differential Equations with Python* alongside my friend and colleague Dr. Jeremy Orloff. The course was a supplement to MIT's introductory differential equations course, *18.03*.
- Created Python applets in Matplotlib, which students would complete as part of weekly homework. Assignments included a second-order differential equation solver, an audio filter applet, and a synthesizer.
- Wrote a report for the math department; the course was taught for the following three semesters.

Fall 2018 @ MIT
- Taught a section of *18.02: Multivariable Calculus.* Gave daily lectures, held near-daily office hours, and conducted tests and grading.
- Taught *Many Interesting Things* as a freshman advising seminar to a group of nine MIT freshmen.
- Served as an academic advisor, providing curricular and emotional support to students as they navigated the whirlwind of their first year at MIT.

Spring 2018 @ MIT
- Piloted *ES.S10: Many Interesting Things*, a novel freshman seminar. Introduced students to material from advanced undergraduate courses, without the pressure of being in those courses.
- Topics were presented with a light workload and no formal assignments or exams, in such a way that students' intrinsic motivation was able to serve as the guiding force for the class.
- The seminar ran through the Spring term of 2018 and covered computer architecture, strobe photography, probability, quantum computation, machine learning, computer vision, relativity, and cosmology.
- Wrote my master's thesis on the course and its outcomes. Student feedback was favorable, and I was hired as a full-time lecturer for the 2018-2019 MIT academic year.

Fall 2017 @ MIT
- Taught a section of *18.02: Multivariable Calculus*, MIT's second freshman calculus course, while working on my Master of Engineering degree.
- Lead TA for *6.163: Strobe Project Laboratory*, MIT's strobe photography course.

Summer 2017 @ Yuan Ze University, Taiwan
- Led a team of MIT students to introduce over two hundred school and college-level students to computer science
- Designed English-minimal curricula for computer architecture, Python programming, and high-speed photography

January 2017 @ ABA Global Education, Recife, Pernambuco, Brasil
- Introduced programming and circuits through Arduino to fifty high school students.
- Taught in both English and Portuguese.

2013-2017 @ MIT
- In January of 2014, the second semester of my freshman year, MIT gave me sophomore status. This was a dangerous thing for them to do: as a student, I crashed and burned under the weight of all the courses I thought I *could* take.
- One good thing comes of it: sophomores are allowed to be teaching assistants. I ask to be a teaching assistant for multivariable calculus and get the job.
- During undergrad, I am a teaching assistant for *18.02: Multivariable Calculus* and *6.163: Strobe Project Laboratory*.