# ALEXANDER KRENTSEL

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## EDUCATION

**University of California, Berkeley - Graduate**                    **2022-2027**
  · *Funded by a National Science Foundation Fellowship*
  PhD in Computer Science
  · Advisors: Scott Shenker, Sylvia Ratnasamy

**University of California, Berkeley - Undergraduate**                    **2015-2019**
  · *Out-of-State Regents' and Chancellor's Scholar* - awarded to 20 students in incoming class
  B.S in Electrical Engineering and Computer Science (EECS)                    GPA: 3.91
  · Honors Degree
  · Magna Cum Laude
  B.A in Music (Violin), *Phi Beta Kappa*
  · Magna Cum Laude

## EXPERIENCE

**Google - Systems Research Group**                    2021 - Present
*Senior Systems Research Engineer*                    *Sunnyvale, CA*

· Performing research focused on increasing the reliability of Google's WAN networks.
· Working with Sylvia Ratnasamy and other researchers to re-architect Google's network from a relatively clean slate, published at SIGCOMM '24.
· Managed two graduate student interns, preparing and designing their projects and reviewing their day-to-day work.

**Google/YouTube**                    2019 - 2021
*Software Engineer*                    *San Bruno, CA*

· Worked on YouTube Music & Premium Growth team, focused on acquisition/retention of Music & Premium members.
· Designed and implemented new "Versatile Flow" infrastructure which supports progress bars, forward and back navigation, error recovery, and easy experimentation out of the box, used by 4 YouTube teams and served 10+ million times a month.
· Built system to calculate and serve Premium Benefit Usage statistics on-demand, displayed in the Premium cancellation flow and member hub. Served more than 13 million times a month.
· Shipped re-designed Premium and Music Premium cancellation flows on new flow infra, decreasing cancellations by 6%.

**Berkeley AI Research Lab (BAIR)**                    October 2018 - April 2019
*Undergraduate Researcher*                    *Berkeley, CA*

· Assisted postdoc in research in Prof. Alyosha Efros' lab, focused on extracting features from video clips and automatically selecting the best music to match a given short video clip.
· Performed statistical data analysis on ratings sourced from Mechanical Turk, developed new video-audio matching hypotheses, and designed new crowdsourcing experiment questions and schema to test hypotheses.

**Google, Facebook, YouTube**                    Summer 2016, 2017, 208
*Software Engineering Internships*                    *Mountain View, Zurich, Menlo Park*

· Industry internships doing full stack development work.

## TEACHING

**AddisCoder**                    July 2023
*Lecturer*                    *Addis Ababa, Ethiopia*

· Taught 100 students aged 15-17 fundamentals of CS.
· Managed TA staff of 19, wrote and gave 15 hours of lectures, oversaw lab material development.

**UC Berkeley**                    Fall 2022
*Head Graduate Student Instructor - CS168 Internet Architecture*                    *Berkeley, CA*

· Managed team of 9 TAs, including distributing work, running weekly staff meetings, and preparing section content.
· Taught 2 discussion sections, prepared discussion and supplementary materials, held 2 weekly office hours, recorded section videos, and wrote/graded exams.

**Howard University** Fall 2021
*Lecturer - CSCI100 Intro to Computer Science* *Washington, DC*

· Lecturer for class of 185 students, made up of mostly first year CS majors and some non-major upperclassmen.
· Created TA hiring process, managed course staff of 1 grad student, 4 undergraduate TAs, and 15 Google volunteer TAs.
· Designed and wrote curriculum, producing 140 lecture videos published publicly on official CSCI100 YouTube channel.
· Built course website (www.csci100.org) and office hours infrastructure, managed Piazza, Mimir, and Blackboard.
· Mentored students, wrote recommendation letters, reviewed resumes, helped students apply to industry/research positions.
· Organized industry guest speakers on technical topics, career path overviews, and interview preparation.

**Stanford** April 2020 - May 2020, April 2021 - May 2021
*Section Leader - CS106A Code-in-Place* *Virtual*

· Member of teaching team for Code in Place at Stanford, with 10,000 global students and 900 volunteer teachers.
· Prepared and taught a weekly discussion section of 10-12 students to supplement professors' lectures in a 5-week introductory online Python programming course based on Stanford's introductory programming course, CS106A.

**UC Berkeley** Fall 2016 - Spring 2019
*Undergraduate Student Instructor* *Berkeley, CA*

· 5 semesters as TA for CS189 Intro to Machine Learning, CS168 Internet Architecture, CS61B Data Structures & Algorithms, EE16A Intro to Electrical Engineering (2x).
· Taught discussion sections, prepared discussion and supplementary materials, held 2 weekly office hours, and wrote discussions/exams.
· Co-wrote and designed new project for CS61B, centered around students designing own game world-generation algorithm.

## SKILLS

**Programming Languages/Frameworks**: **Foreign Languages**:
C++, Python, Go, Java, JS, Android, React, Angular Fluent in Russian and Ukrainian, Intermediate in Spanish

## EXTRACURRICULAR ACTIVITIES

**Berkeley Engineers and Mentors (BEAM) Officer, Site Leading and External Affairs**
   · Taught weekly after school science lessons at local elementary schools. Led school-specific team of 5 mentors.
**TEDxBerkeley Organizer**
   · Co-organized TEDxBerkeley 2019 with a team of 11 others, bringing 18 diverse speakers.
   · Successfully sold out tickets to the event, managing a budget of over $100,000.
   · Co-Director of Technology, and member of Marketing and Partnerships teams.
**Regents Overnight Host Program Committee**
   · Organized the first Regents Overnight Host program for 50 out-of-state Regents' Scholarship candidates.
**UC Berkeley Symphony Orchestra**
   · Assistant Principal 2nd Violinist, Assistant Principal Viola, 1st Violinist
**UC Berkeley Chamber Music**
   · 1st Violinist in string quartet. Performed in masterclass for Takacs Quartet and in 3 Berkeley Community Concerts.
**Eta Kappa Nu (HKN) Officer, Industrial Relations and Tutoring**
   · Organized weekly drop-in tutoring for covering all EECS classes, staffed by other HKN officers for 30 hours a week.
   · Built/maintained relationships with industry recruiters, co-hosted recruiting events and solicited donations.
**Googler Orchestra**
   · Co-organizer and principal 2nd violin of the Googler Virtual Orchestra, bringing together more than 325 musicians to produce virtual concerts asynchronously.
**Howard University Orchestra**
   · Concertmaster

## AWARDS AND HONORS

**National Science Foundation Graduate Fellowship**: Selected for inaugural year of NSF CSGrad4US Graduate Fellowship program, which provides $138,000 in support over 3 years towards a PhD to return from industry to academia.
**Out-of-State UC Regents' and Chancellor's Scholarship**: Awarded to 20 students out of 8,800 person class, this scholarship provides $100,000 plus full financial need, totaling $210,000 over 4 years.
**Accel Scholar**: Selected as one of top 25 Computer Science students as part of the 2017-2018 inaugural class.
**EECS Honors Program**: Graduated from Honors Program with an Honors Degree, breadth area of Music.
**Kraft Award for Freshmen**: Stipend awarded to freshmen achieving a 4.00 GPA in their first fall semester at Berkeley.

**Cal Leadership Award**: $2,000 scholarship awarded by the Cal Alumni Association to recognize innovative, initiative-driven leadership impacting their academic, work, or community environments.

**Phi Beta Kappa (PBK)**: Liberal Arts Honor Society, membership extended to top 10% of liberal arts students

**Eta Kappa Nu (HKN)**: Elec. Eng. & Computer Science Honor Society, inducted as part of top 25% of EECS juniors.

**Tau Beta Pi (TBP)**: Engineering Honor Society, inducted as part of the top 12% of junior standing Engineering students.