

Kotaro Kajita

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135 W. Lorain Street, OCMR 1221, Oberlin, OH, 44074

EDUCATION

Oberlin College

Bachelor of Arts : Mathematics (with honors), Physics

Oberlin, OH

Expected May 2021

RELEVANT COURSES TAKEN

Math: MATH 401 Honors (Fall 2020), MATH 357 Harmonic Analysis (Spring 2020), MATH 327 Group Theory (Spring 2020), MATH 301 Foundations of Analysis (Fall 2019), MATH 232 Linear Algebra (Spring 2019), MATH 350 Differential Geometry (Spring 2019), MATH 234 Differential Equations (Fall 2018)

Physics: PHYS 451 General Relativity Private Reading, PHYS 412 Applied Quantum Mechanics / Advanced E&M (Fall 2020), PHYS 314 Intermediate Lab (Fall 2020), PHYS 311 Electricity and Magnetism (Spring 2020), PHYS 312 Quantum Mechanics (Fall 2019), PHYS 310 Classical Mechanics (Spring 2019), PHYS 212 Modern Physics (Fall 2018)

Computer Science : CSCI 150 Intro to Computer Science Python (Fall 2019)

PROFESSIONAL EXPERIENCE

Research

Honors Research

August 2020 – Present

Oberlin College

(Advisor : Jim Walsh)

Discontinuous ODE model of glacial cycles : Using low order ODE to model the non-glacial to small glacial state with dynamic ice line and diffusive heat transport.

January Term

Oberlin College

The college offers a January Term in which each student works on a project of their own during the month of January.

January 2020

Independent Research (Advisor : Chris Marx)

Structure and geometry of Hilbert and Banach spaces, linear operators, and applications to quantum mechanics.

Main Resource : *Functional Analysis, Entering Hilbert Space* by Vagn Lundsgaard Hansen.

January 2018

Independent Research (Advisor : Benjamin Linowitz)

Applying root-mean-squared errors and Fourier analysis to approximate the prime-counting function, understanding the Riemann hypothesis.

Main Resource : *Prime Numbers and the Riemann Hypothesis* by Barry Mazur and William Stein.

Teaching

Math 301 (Analysis) Dedicated Tutor

September 2020 – December 2020

Oberlin College

Dedicated tutors at Oberlin College must familiarize themselves with the course material and assist the students in their learning experience. This includes holding office hours for reviewing concepts from class and homework help.

Physics 110 (Mechanics and Relativity) Lab Assistant

September 2019 – December 2019

Oberlin College

High School Tutor*Oberlin High School*

January 2019

Drop-in tutor for math and sciences at local high school.

Grader for Math / Physics Department*Oberlin College*

September 2018–Present

- Math 231 Multivariable Calculus
- Math 133 Calculus I
- Physics 110 Mechanics and Relativity

SKILLS**Computer Programs:** Python, Mathematica, LaTeX, IgorPro**Language:** Japanese (Native), English (Fluent)

EXTRA CURRICULAR**Oberlin College Varsity Baseball****Oberlin College Japanese Student Association**