

Taisuke YASUDA

Mathematics · Computer Science

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Residential status : US permanent resident

EDUCATION

2015-2019 **MS Mathematics**, Carnegie Mellon University (GPA 3.79/4.00)
2015-2019 **BS Mathematics and Computer Science**, Carnegie Mellon University (GPA 3.79/4.00)

Selected coursework (graduate) : Algorithms for Big Data, Advanced Real Analysis, Probability, A Theorist's Toolkit, Machine Learning
Selected coursework (undergraduate) : Parallel Computer Architecture and Programming, Algorithms, Computer Systems

EXPERIENCE

Present Jan 2018	Dept. of Computer Science, Carnegie Mellon University (PITTSBURGH, PA) <i>Undergraduate Researcher in Machine Learning</i> <ul style="list-style-type: none">Proposed and investigated a new problem in theoretical machine learning with Prof. David WoodruffProved theorems towards tightening bounds on the query complexity of kernel problems
Present Jun 2018	Dept. of Mathematics, Carnegie Mellon University (PITTSBURGH, PA) <i>Undergraduate Researcher in Analysis & Partial Differential Equations</i> <ul style="list-style-type: none">Researched a problem in phase separation and calculus of variations with Prof. Giovanni LeoniProved the asymptotic stability and decay theorems in fluid dynamics with Prof. Ian TiceAuthored a 50 page manuscript, to be submitted
Present Sep 2016	Dept. of Mathematics, Carnegie Mellon University (PITTSBURGH, PA) <i>Teaching Assistant/Grader</i> <ul style="list-style-type: none">Held office hours and recitations for Linear Algebra with a focus on applications in CS (Fall '18)Graded homeworks for Principles of Real Analysis I (Spring '18) and Putnam Seminar (Fall '16, Fall '17)

SOFTWARE PROJECTS

PARALLEL SKETCH, 15-418 (PARALLEL COMPUTATION) COURSE PROJECT github.com/TaisukeYasuda/parallel-sketch/ <ul style="list-style-type: none">Implemented sketching algorithms (e.g. count sketch, leverage score sampling) in C++ and CUDAAchieved up to a $\sim 40\times$ speedup parallelized implementation over a sequential implementation	SPRING 2018
WEBSITE FOR US MATHEMATICS COMPETITION ASSOCIATION github.com/USMCA/database-website/ database.usmath.org <ul style="list-style-type: none">Full stack development (React/Redux, Node/Mongo) for nationally shared math contest proposalsLead development in a team of 3, teaching React and Redux concepts to the front end developerDemoed to and used by major US math competitions	SUMMER 2017
LIBRARY MANAGEMENT WEBSITE FOR MIAMI JAPANESE SCHOOL github.com/TaisukeYasuda/tosho/ miami-tosho.herokuapp.com <ul style="list-style-type: none">MEAN stack development of a library website managing ~ 250 students and ~ 4000 booksWorked in person with librarians on requested features and demoed to school administration	SUMMER 2016
DENDRITE TRACE, 15-112 (INTRODUCTION TO PROGRAMMING) COURSE PROJECT github.com/TaisukeYasuda/dendrite-trace/ <ul style="list-style-type: none">Designed an algorithm based on reinforcement learning for automatic tracing dendrites in 3D imagesImplemented the algorithm in Python along with tools for manually labeling training data	FALL 2015

SKILLS

Comfortable : Python, JavaScript (ES7, Node), C/C++
Familiar : CUDA, Java, Matlab, R, Mongo
World Languages : English (native), Japanese (native)

AWARDS

Apr 2018 Top 250, Putnam Competition
Apr 2017 Top 500, Putnam Competition
Nov 2016 **CNBC Computational Neuroscience Fellowship**
Feb 2016 Top 3, **TartanHacks**
Mar 2015 2nd place, Pathfinder Scholarship in Mathematics