[amt6@williams.edu](mailto:amt6@williams.edu)

**Alex Trevithick**

[alextrevithick.github.io](https://alextrevithick.github.io/)

[GitHub](https://github.com/alextrevithick)

**Education**

**UC San Diego**, La Jolla, CA 2021 PhD Student, Computer Science, *Jacobs School of Engineering Fellowship*

Advisor: Ravi Ramamoorthi

**Williams College**, Williamstown, MA 2017 – 2021 Bachelor of Arts in Computer Science and Mathematics, *Magna Cum Laude*

GPA: 3.94

**University of Oxford**, Oxford, UK 2019 – 2020 Williams Exeter Programme at Oxford

GPA: 4.0

**The Hotchkiss School**, Lakeville, CT 2015 - 2017

*Cum Laude*

**Publications**

**A. Trevithick**, and B. Yang, “GRF: Learning a General Radiance Field for 3D Scene

Representation and Rendering,” ICCV, 2021

**Featured**: [NeRF Explosion](https://dellaert.github.io/NeRF/), [AI Times](http://www.aitimes.com/news/articleView.html?idxno=132777)

**Research Interests**

Computer Vision,3D Reconstruction, Neural Rendering, Theory of Deep Learning, Implicit Neural Representations

**Research Experience**

**Research Intern**– Max Planck Institute for Informatics May – September 2021

* Research neural rendering in Graphics, Vision, and Video Group under Christian Theobalt

**Summer Research Fellow**– Williams College 2020

* Researched [implicit representations](https://github.com/alextrevithick/Periodic-Activations/blob/main/PeriodicActivations.ipynb) and Neural Tangent Kernel of MLPs with periodic activations

**Wilmers Fellow**– University of Oxford 2020

* Researched generalization in neural scene representations with Bo Yang
* [Extended neural radiance fields](https://github.com/alextrevithick/GRF) to synthesize novel views from sparse inputs and predict novel scene representations in a single forward pass

**REU Researcher** – Washington State University 2019

**High School Honors Science Program** – Michigan State University 2016

**Technical Skills**

Python, TensorFlow, Jax, CUDA, Java, C, SQL

**Awards**

**2021** Jacobs School of Engineering Fellowship from UC San Diego

**2021**  Elected to Phi Beta Kappa and Sigma Xi at Williams College

**2020** Robert G. Wilmers, Jr. 1990 Fellowship

**2020** Williams College Summer Research Fellowship

**2019** John Houghton Harris Memorial Scholarship

**2018** Alumni-Sponsored Internship Program Grant

**2017** Amherst College Schupf Research Scholarship for $20,000 (nominated)

**Teaching Experience**

**Teaching Assistant in Measure Theory & Hilbert Spaces** – Williams College  2020

* Hold seven review sessions per week to present solutions to hardest problems

**Teaching Assistant in Introduction to Computer Science** – Williams College  2019

* Administer Python programming lab help for seven hours per week and grade student labs

**Teaching Assistant in Computational Linear Algebra** –­ Williams College2018

* Grade problem sets in R and hold weekly help session

**Industry Experience**

**Data Analyst Intern** –­ Haystack Search*,* Brooklyn, NY 2018

* Cleaned and analyzed data with SQL for predictive analytics and hyperlocal product search

**Projects**

**Image Regression with Periodic Activations and Neural Tangents** ([Code](https://github.com/alextrevithick/Periodic-Activations/blob/main/PeriodicActivations.ipynb)) 2020

* Proposed a novel implicit neural representation architecture, SINONE
* Showed simple architecture performs on par with the Fourier positional embedding in both theory and in practice in the task of image regression

**ChessAI** ([Code](https://github.com/alextrevithick/ChessAI)) 2020

* Implemented alpha-beta pruning with quiescence search for arbitrary two-player games and constructed a novel chess heuristic for automated chess playing

**References**

* Bo Yang, Assistant Professor at The Hong Kong Polytechnic University, bo.yang@cs.ox.ac.uk
* Cesar Silva, Hagey Family Professor of Mathematics at Williams College, csilva@williams.edu
* Leo Goldmakher, Assistant Professor at Williams College, leo.goldmakher@williams.edu