

Christian F. Tarrasch

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EDUCATION

Dual Bachelor of Science and Arts Degree Program

Columbia University

BS, Applied Physics

May 2026

New York, NY

- Dean's List

- Thomas C. Marshall Scholar: Scholarship awarded annually to one undergraduate student in the Department of Applied Physics and Applied Math

- Columbia Grant: Full funding to the Fu Foundation School of Engineering and Applied Science

Sarah Lawrence College

BA, Physics

Bronxville, NY

- GPA: 3.92/4.0 | Dean's Scholar, Summa cum laude

TECHNICAL SKILLS

- **Languages:** C++, Python, JavaScript, HTML/CSS
- **Graphics & Physics:** OpenGL, GLM, Ray Tracing, Rigid Body Dynamics
- **Tools:** Git, LaTeX, Linux, VS Code
- **Languages:** English (Native), German (Native)

TECHNICAL PROJECTS

C++ Ray Tracer | GitHub

- Implemented a C++ ray tracer based on "Ray Tracing in One Weekend," featuring positionable cameras, antialiasing, and defocus blur
- Optimized rendering performance by implementing multithreading to parallelize pixel computation across CPU cores
- Programmed material behaviors, including Lambertian diffusion, metals, and dielectrics

Physics Engine Testbed | GitHub

- Developed a lightweight 2D/3D physics engine in C++ using the GLM mathematics library
- Implemented collision detection algorithms, impulse resolution, and rigid body motion integration for real-time simulation

EXPERIENCE

Founder — Web Development & Consulting

Aug 2021 – Present

Remote

- Manage end-to-end website projects for small businesses, from requirements gathering to deployment
- Advise clients on product strategy, UX improvements, and SEO optimization, enhancing user engagement
- Reduced annual costs by more than 50% streamlining hosting solutions for Wedgwood International Seminar

Sarah Lawrence College

May 2023 – May 2024

Undergraduate Physics Researcher

Bronxville, NY

- Secured NSF-IUSE grant to develop NMR spectroscopy modules for quantum mechanics education
- Conducted T1 and T2/T2* relaxation experiments on benchtop NMR systems; analyzed data to refine teaching content
- Presented research at the American Chemical Society National Conference, March 2024

LEADERSHIP

- **Society of Physics Students** — Chapter Treasurer; managed budget and helped lead new chapter to "Distinguished Chapter" recognition in SPS magazine

- **Student-Faculty Search Committee** — Official Student Representative; nominated by faculty to evaluate academic candidate presentations and provide strategic feedback to hiring committee