Nicholas W. Breitling

744 Applewood Cir., Victoria, MN 55386

(+1) 952-905-4220 ⋄ breitnw@u.northwestern.edu

EDUCATION

Northwestern University, Evanston, IL   *Sep. 2024 - Present*
- GPA: 4.0/4.0
- Coursework: Programming Languages, Data Structures and Algorithms, Computer Systems

Northeastern University, Boston, MA   *Sep. 2024 - Present*
- GPA: 4.0/4.0
- Coursework: Accel. Fundamentals of Computer Science 1 and 2, Accel. Discrete Structures, Intensive Math Reasoning, Logic & Computation

Minnetonka High School, Minnetonka, MN   *Sep. 2019 - Jun. 2024*
- GPA: 4.615 (W), 4.0 (UW); ACT: 36
- Coursework: AP CS A, AP CS Principles, Calculus 1-4, Linear Algebra
- Awards: National Merit Scholarship Award, Dartmouth Alumni Club Book Award, AP Scholar with Distinction, Summa Cum Laude

RESEARCH & PROJECTS

Research Assistant, Programming Research Laboratory Prague   *Jan. 2024 - Sep. 2024*
- Collaborated on the development of a new infrastructure for just-in-time compilation of the R programming language
- Aided in transition from C++ to a Java compile server, focusing specifically on RDS serialization
- After completion of RDS writer, integrated serialization system as a communication protocol between C++ frontend and Java backend, enabling comprehensive integration testing via package compilation

Independent Researcher, Minnetonka Research   *Sep. 2022 - May 2023*
- Project title: *Improving sphere blending performance for fluid simulation applications using ray-marched rendering*
- Worked with Vulkan to develop ray-marched and mesh rendering engines, utilizing a smooth-min distance field and a marching-cubes algorithm, respectively, for sphere blending.
- Compared performance metrics for both algorithms, highlighting efficiency of ray-marching
- Twin Cities Regional Science Fair: awarded blue ribbon (first place in Systems Software category), purple ribbon (advancement to State), and Stockholm Junior Water Prize

EXPERIENCE

Project Lead, The Humanity Alliance   *May 2021 - May 2023*
- Service internship with the Humanity Alliance, non-profit delivering 9,000 meals/wk to food-insecure families
- Developed and programmed a full-stack, user-friendly dashboard to streamline integration of meal requests and delivery data with an interactive map, greatly reducing manual entry time by automating route calculation and assignment
- Maintained communication with organization leadership to address needs for administration, user permissions and security

Camp Counselor ("Sensei"), Code Ninjas   *Summers 2021 - 2023*
- Lead counselor for weekly camps throughout summer. Provided one-on-one and presentational instruction to guide campers through curriculum and difficult concepts related to programming and application development
- Planned and implemented supplemental lessons in Lua and Scratch programming, 3D modeling, music distribution, and more, fostering an engaging environment for advanced campers

ACTIVITIES

Title of the activities, institution associated with it   *start date- end date*
description of the activities

SKILLS

Programming Languages and Frameworks
list whatever programming skills you have

Languages
languages

AWARDS AND SCHOLARSHIPS

Name of awrd/scholarship , institution associated with the award   *date awarded*
description of the award/scholarship