

# Nicholas W. Breitling

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breitling.nw@gmail.com  
+1 (952) 905-4220

## Relevant Education

***Minnetonka High School diploma:*** Expected June 2023

- 4.578 GPA (weighted), 4.0 (unweighted), 36 ACT
- 16 college-level courses completed by graduation (AP/IB/Dual-Enrollment)
- Computer Science: AP Computer Science A, AP Computer Science Principles
- Mathematics: AP Calculus AB, AP Calculus BC, dual-enrollment Multivariable Calculus, dual-enrollment Differential Equations and Linear Algebra
- Minnetonka Research: computer graphics project, 2022/23
- VANTAGE Program: UX Design, 2021/22

## Awards & Honors

- ***National Merit Finalist:*** Feb. 2023 - Earned 1500/1520 on PSAT, for selection score of 225
- ***Tonka Hacks Hackathon***
  - ***1st place:*** Nov. 2022 - Three-day, multi-school coding competition to create a solution for a preselected topic, "Improving Environmental Sustainability." Developed a social media web app with daily environmental awareness challenges, including 3D map visualizations made with Three.js
  - ***3rd place:*** Dec. 2021 - Given the topic "Making Education Interesting Again: Improving Online Learning during COVID." Used Node.js and Socket.io to develop a web app that enables teachers to present live, interactive slides and quizzes.
- ***College Board AP Scholar with Distinction:*** July 2021/2022 - Achieved the maximum score of 5 on 9 AP exams (Physics, Chemistry, Biology, Calculus AB, Calculus BC, English Lang. and Comp., English Lit and Comp., Computer Science A, Computer Science Principles)
- ***Dartmouth College Alumni Club Book Award:*** May 2022 - Nominated and selected by MHS faculty. Presented to 1 of 897 Juniors who demonstrates strong character, and who has excelled both academically and in their extracurricular activities
- ***MHS Robotics MN State Tournament: 7th place out of 266 active teams in MN:*** May 2022
- ***MHS Robotics MN 10,000 Lakes Regional: 2nd place out of 55 teams:*** April 2022
- ***VANTAGE Design Sprint, Project Lead, 1st place:*** Oct. 2021 - Website redesign for TwoMinuteTeacher, a local ACT tutoring business
- ***Eagle Scout, Scouts BSA:*** Sept 2012 - Apr 2021 - Highest rank in scouting, earned through years of rank advancements. Requires leadership, service and learned skills in addition to earning at least 21 merit badges and an extensive Eagle project to benefit the community
- ***Academic Letter (9, 10, 11):*** Term GPA of 3.850 or higher, both fall and spring semester
- ***Minnetonka High School 'A' Honor Roll (9, 10, 11):*** Both fall and spring semesters

## Extracurricular Experiences

***Minnetonka Research Program, Minnetonka High School:*** Sept. 2022 - Present

- One year, on-site lab opportunity connects dedicated students with industry partners and Ph.D-level mentors with expertise in the student's area of research during the school year
- Computer science research project: *Improving 3D fluid simulation performance with ray-marching and a combined grid-particle algorithm*

***Humanity Alliance Service Project, Victoria, MN:*** May 2021 - Present

- Worked with the Humanity Alliance, a Twin Cities non-profit preparing and delivering over 9,000 nutritious meals per week to food-insecure families across 9 counties
- Developed and programmed a user-friendly interface to streamline integration of meal requests and delivery data with an interactive map, greatly reducing manual entry time and improving efficiency of weekly planning.
- Automated the process for calculating and assigning routes to volunteer delivery drivers
- Utilized Flask for back-end development, Redis for data storage, and Docker for containerization

***Minnetonka Robotics Team 3082 ("Chicken Bot Pie"), Captain:*** Sept. 2019 - Present

- Tasked with overseeing both programming and electronics sub-teams, creating timelines, and communicating schedules and concerns to adult coaches
- Additional responsibilities include developing both autonomous and teleoperated code for the robot and teaching Java skills to new members
- Helped guide a team of approximately ten programmers in creating a stereoscopic vision system using OpenCV, a highly mobile Swerve drivetrain, in addition to other subsystems

***VANTAGE UX Design, Pre-Professional Program, Minnetonka High School:*** Sept. 2021 - June 2022

- LMI Lawn Care - Brainerd, MN - Project Lead/Communications Lead, website redesign
  - Built out a full redesign of LMI's website, improving upon user experience with iterative usability testing
  - Moved through multiple phases of ideation, data collection, prototyping, development, and presentation
- TwoMinuteTeacher, ACT Prep company - Minnetonka, MN - Project Lead, website redesign
- Excelsior-Lake Minnetonka Historical Society - Excelsior, MN - Project Lead, mobile app design

***National Honor Society Member:*** Sept. 2021 - June 2022

- Accepts students who demonstrate leadership, service, and academic achievement
- Members meet monthly and complete a minimum of 15 hours of service over the course of the school year

***Computer Science Club Member:*** Sept. 2021 - June 2022

- Discussed current topics and trends in computer science during weekly meetings

***Minnetonka HS Band, Euphonium:*** Sept. 2019 - June 2021

- Varsity Band (9th grade)
- Symphonic Band (10th grade)

***Scouts BSA, Eagle Scout Service Project:*** May - Aug. 2020

- Led and organized a large-scale project benefiting the Carver-Scott Humane Society, including the planning and facilitation of the construction of cat climbing shelves for a new visitation room and 25 cat beds for prospective foster families (201 service hours among 14 volunteers)
- Served as Patrol Leader, Assistant Patrol Leader, Troop Librarian, and Troop Historian

***Piano:*** 2014-2020

- Private lessons, 7 yrs. Participated in several concerts yearly, including holiday concerts for a local nursing home; continue to enjoy playing

**Employment Experience*****Camp Counselor ("Sensei"), Code Ninjas Chanhassen:*** Summer 2021, 2022

- Helped campers from ages 7 to 14 develop basic programming skills through computer science-related projects
- Assisted campers in moving through the curriculum and exploring difficult concepts, making the experience engaging through relevant games and challenges

**Community Activities*****Humanity Alliance, Victoria, MN:*** 2021-2022

- Participated in monthly volunteering, including food preparation, packaging, sorting and delivery to food-insecure families in the area

***Scouting-Related Community Service:*** 2012-2021

- Feed My Starving Children, Habitat for Humanity, Auburn Manor Nursing Home, Carver Park Reserve, City of Victoria, Carver-Scott Humane Society

***Faith Formation and Confirmation Classes, St. Victoria Parish:*** 2010-2021

- Weekly religion classes and various service retreats

**Skills**

- Programming in Python, Rust, Java, and JavaScript (including Node.js, Socket.io, and jQuery)
- Full-stack web development using Docker, Flask, Redis, JavaScript, HTML, and CSS
- Providing leadership in teams of various sizes, as exemplified by Scouts BSA, VANTAGE, and FRC projects
- Gathering data through user interviews, usability testing, and other user research methods
- Using Figma and Adobe Illustrator for design and prototyping, especially that of web and mobile applications