Alek Broman
Security Clearance • 2016 – 2026

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EXPERIENCE

F-16 Aerospace Propulsion Technician
Air National Guard, 148th Fighter Wing   **Aug 2016 – Present, Duluth, Minnesota**
• Revised erroneous schematics by drawing on the expertise of top experts in the unit and forming technical conclusions for remediation.
• Effectively streamlined a laser etching workflow of the aerospace propulsion activities to create an efficiency that reduced maintenance time.
• Overhauled personnel in-processing pipelines by discovering and eliminating redundancies, which accelerated unit personnel admission.

Undergraduate Research Assistant
Swenson College of Science and Engineering, Fast-Response Wind Modeling Team   **Jun 2021 – Aug 2021, Duluth, Minnesota**
• Chosen by the computer science department head to collaborate and finalize his research project funded by the National Science Foundation.
• Developed a test that compared wind field solvers, ultimately exposing two threatening bugs which were immediately patched by senior engineers.
• Formulated an equation for use in a complicated wind direction test, effectively improving a function's time complexity from cubic to constant.

EDUCATION

Bachelor of Science, Computer Science, Dean's List
Minor in Computer Engineering and Mathematics
University of Minnesota Duluth • 2021

Associate of Applied Science, Aviation Maintenance Technology
Community College of the Air Force • 2021

U.S. Air Force Program, Aerospace Propulsion Technical Training
Sheppard Air Force Base • 2017

U.S. Air Force Program, Basic Military Training
Lackland Air Force Base • 2017

SKILLS

C++	Java	JavaScript	React	HTML	CSS
Unreal Engine	Fusion 360	Cura	G-code	Git	Agile

AWARDS

Saturn Systems Computer Science Scholarship
Saturn Systems Software Engineering • 2021
"For demonstrating strong academic performance, high personal character and, above all, a passion for Computer Science."

Honor Award: Placed Top 5 of 1200 Trainees
Basic Military Training • 2017
"In recognition of remarkable performance in Basic Military Training. You led the way for those around you and set the example for every Airman in every squadron."

Squadron Award: Top Graduate of 200 Trainees
Basic Military Training • 2017
"Your superior attitude, bearing, discipline, appearance, physical fitness, and academic performance epitomized our Air Force Core Values and set you apart from your peers."

PROJECTS

React App: Pathfinding Visualizer
pathfinder.page • Dec 2020 – Apr 2021
• Built React application for visualizing pathfinding and procedural maze generation.
• Implemented six pathfinding algorithms and one recursive division algorithm.
• Designed fully responsive front-end with viewport-dependent scaling visualization speed and exhaustive user input error handling.

Hardware Project: Realistic Lightsaber
sunsabers.com • 2020 – 2021
• Conceptualized and designed lightsaber components with Fusion 360 and Cura.
• Manufactured lightsaber components with fused filament fabrication technology.
• Used components to assemble advanced, movie-like, duel-ready lightsabers with 32-bit microcontrollers and NeoPixel LEDs.