Kieron von Buchstab

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EDUCATION

Carleton University — Ottawa, ON
Bachelor of Engineering in Aerospace Engineering — *May 2026*

EXPERIENCE

Systems & Software Engineering Intern — May 2023 - Present
Lockheed Martin - River-Class Destroyer Program — *Ottawa, ON*
- Automated scraping of technical documents with Python which previously had to be parsed manually due to encryption, ultimately saving 5046 hours of work ($302,700)
- Directed laser systems certification effort, coordinating across Lockheed Martin, Irving Shipbuilding, and National Defence to ensure all lasers onboard the River-Class Destroyer were certified for use
- Developed Python script to automate parsing of rules and regulations kept in WindChill (document management client) saving 500 hours of manual labor ($30,000)
- Managed technical risk register and chaired cross-functional risk review sessions for the River-Class Destroyer ensuring risks were managed, subverting future complications with ship design
- Developed Python/VBA tool for creating Visio diagrams to display regulatory compliances at vendor meetings, eliminating 1040 hours ($62,400) of manual work

CubeSat Research Assistant — Nov. 2021 – Present
Carleton University - Satellite Design Project — *Ottawa, ON*
- Developed a mobile ground station for tracking fast moving satellites in Low Earth Orbit (LEO) using SolidWorks, C++, and Python, leading to the successful receipt and decoding of data from LEO satellites
- Built a closed loop feedback system using rotary encoders and C++ to improve pointing accuracy of ground station, bringing pointing accuracy down from $10°$ to $2°$
- Constructed and validated antennas for communication with satellites in Low Earth Orbit using a software-defined radio, culminating in the successful reception and decoding of weather data from NOAA satellites
- Formulated a spiral search algorithm in Python to spiral a ground station and search for satellites in the sky allowing for the successful discovery and reception of geosynchronous satellites
- Designed and constructed a sun sensor testing rig using Onshape for validating the accuracy of satellite sun sensors at various inclinations, leading to the validation of sun sensor accuracy to $.01°$

PROJECTS

Turbocharger Jet Engine | *Manufacturing, Fluid Mechanics, CAD* — May 2025 – Present
- Manufactured a turbojet engine using an automotive turbocharger to gain a broader perspective on engineering in contrast to my purely theoretical schoolwork, ultimately constructing a turbojet engine producing 20N of force and gaining a better understanding of the manufacturing process
- Designed and manufactured a flame tube and combustion chamber using CATIA based on turbocharger sizing, permitting adequate air into the chamber for efficient combustion
- Calculated the fuel rate required to keep the jet engine running based on mass flow analysis and combustion chamber design, allowing for the determination of fuel spray nozzle requirements

Scholify - Publishing Company | *Web Design, HTML, CSS, JavaScript* — June 2023 – Aug 2024
- Created an academic publishing company for undergraduate students unable to attend conferences during the school year, publishing various academic research papers by undergraduate students
- Built a website using Figma, HTML, CSS, and JavaScript, to receive submissions for papers and host published papers online, which received and published multiple academic papers

GPA Cryptocurrency | *Ethereum, Blockchain* — April 2025 – Present
- Developed an Ethereum backed cryptocurrency that fluctuates with my GPA as a means of learning more about cryptocurrency and blockchain technologies, culminating in my first cryptocurrency, KCoin (KGPA) on Uniswap

SKILLS

Technical Skills: SolidWorks, CATIA, Onshape, Simulink, Wireshark, GPredict, Software-defined radio
Languages: Python, C++, VBA (Visual Basic for Application), MATLAB, HTML/CSS
Tools: Git, VS Code, Jira, Confluence, IBM DOORS, Excel (data automation), Figma, Vim