CALLUM McCULLOUGH

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Ann Arbor, MI
Burlington, VT

Previous Employment

Shop Attendant at Carnegie Mellon, 2021-2022
Restoration Assistant at Carpentry Plus, 2022
Auto Detailer at Shadyside Detail, 2022-2023

Communications Experience

Volunteer editor for Freeverse literary magazine, 2018
Photography published in award-winning Communicator magazine, 2018
Independent essay, memoir, and technical writing experience, 2019-present
Composing and presenting CMR design reviews, 2019-2021
Managing 6-person CMR subsystem team, 2020-2021
Member of Carnegie Mellon Men's Ultimate Frisbee Social Committee, 2021-2022

Technical and Personal Skills

Proficient in Solidworks
Proficient in Python
Well versed in business software like Slack, Confluence, and JIRA
Seasoned photographer and graphic designer, familiar with Canon, Nikon and Olympus products, as well as Adobe Creative Suite software and film development
Very experienced auto technician
Talented fabricator and machinist
Sound conversational and writing skills in both English and French
Responsible, honest, and reliable, whether working in a team or independently
Strong sense of motivation and a learning-oriented mindset
Confident and empathetic, always seeking to understand and befriend new people

Education and Relevant Coursework

University of Michigan
MATH185/6 - Honors Real Analysis I & II, 2017-2018
CHEM130 - Introduction to General Chemistry, 2019
MSE250 - Introduction to Materials Science, 2019

Carnegie Mellon University, pursued BS in Materials Science and Engineering
15-112 - Advanced Fundamentals of Programming and Computer Science, 2020
24-101 - Fundamentals of Mechanical Engineering, 2020
27-201 - Structure of Materials, 2020
25-215 - Thermodynamics of Materials, 2020
51-261 - Fundamentals of Communication Design, 2021
51-831 - Methodologies of Visualization, 2021
76-292 - Film Production, 2021
49-300 - Integrated Product Conceptualization, 2022
24-370 - Engineering Design, 2022
15-394 - Rapid Prototyping, 2022
76-261 - Creative Nonfiction, 2022
60-278 - Portfolio Installation, 2022

Engineering Experience

First-year member of Carnegie Mellon Racing (CMR)
Conducted chassis, aerodynamic, and grounded low voltage design reviews, 2019
Manufactured and tested composite airfoils and grounded low voltage components, 2020

CMR Braking System Leader
Development leader for Brake Dynamometer, 2020-2021
Development leader for vehicle braking system, 2020-2021

Independent Projects
Frame-up restorations of 1975 Kawasaki KZ400, 1986 Kawasaki GPZ900, 1984 Honda V65 Sabre
2007 Triumph Daytona 675 engine rebuild
Custom 2012 Triumph Bonneville street-tracker build
BP6D swap into a 1991 Mazda Miata, including writing my own Micro Python VVT controller, all supporting fabrication, as well as 5 years worth of other mods, maintenance and repairs
1989 F150 E4OD transmission rebuild (my current daily)
Camper conversion of a 2003 Silverado, including modular sleeping/storage and separate electrical system
Built a custom single-cookie oven with a MicroPython controller
"Frame-up" restoration of a vintage espresso machine
Lots of custom cnc-routed furniture, including tables, chairs, shelves, etc
"Swiftly", a Python webapp that tells you if what you're hearing is Taylor Swift
Currently designing a tabletop CNC mill