

COLIN HODGE

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Skills

SOFTWARE

Autodesk AutoCAD
SolidWorks
Matlab
Microsoft Office
LaTeX (Overleaf)
Solid Edge
Arduino C
Python
Simulia ABAQUS
Web Crawling (Selenium)
HTML
CSS
Adobe Lightroom Classic
Adobe Premiere Pro
Adobe After Effects

RECREATIONAL

German Language
Black Belt in Tae Kwon Do
Wilderness First Aid

RELEVANT COURSEWORK

Computational Solid Mechanics (ABAQUS)
Structural Dynamics
Financial Mathematics
Advanced Material Processing
Renewable Energy Harvesting
Fluid Mechanics
System Dynamics
Advanced 3D Drafting (SolidWorks)
Heat Transfer
Thermo-Fluids Lab
Materials and Mechanics Lab
Applied Thermodynamics
Design of Elements

LABORATORY SKILLS

Hot Wire Anemometer Calibration
Air Flow Measurement with Pitot Tubes & Manometers
Metal Fabrication
Photo-Stress Analysis
Tensile Testing
Strain-Gage Beam Analysis
Tensile Testing
Residential Electrical Wiring

Employment

Dimensional Building Consultants CAD Drafter/Field Technician

Bellevue, WA
June 2022 to Current

- Assisted in developing building envelope design aspects of projects.
- Conducted field site visits to review the constructability of AutoCAD files.
- Produced field notes, photographs, and accurate measurements.
- Reviewed construction documents as necessary to understand and create job-specific AutoCAD details and drawings.

Alta Ski Lifts Ski Shop Technician

Alta, Utah
Nov. 2021 to May 2022

- Certified binding technician to work on most consumer binding brands.
- Responsible for testing and understanding the inner workings as well as the differences between different types of skis, bindings, boots, and other ski gear.
- Trained in ski boot liner fitting and molding.
- Salesman for the retail and equipment portion of the shop.

Green Mountain Solar Solar and Battery Install Electrician

Williston, Vermont
Apr. 2021 to Oct. 2021

- Installed roof and ground-mounted photovoltaic (PV) systems to code using drawings, schematics, and instructions provided by the company and local AHJ.
- Promoted to be part of the Tesla Powerwall install team after 3 months of solar installation for showing interest and skill in hands-on residential electrical work.
- Upgraded home electrical panels as well as installed backed up and non-backed up load centers giving customers the capability to fully control their residential electrical system.
- Position increased proficiency with the many tools and hands-on work that come with residential electrical work.

University of Vermont Grader/Teaching Assistant

Burlington, VT
Jan. 2020 to May 2021

- Responsible for accurately and fairly grading homework assignments, quizzes, and exams.
- Provided guidance to younger students taking the course by giving feedback on work and answering questions that came up throughout the semester.
- Position for ME 012 (Dynamics) & ME 040 (Thermodynamics).

Education

The University of Vermont
Bachelor of Science: Mechanical Engineering, 2021
Minor: Mathematics, 2021
GPA: 3.10/4.00

Aug. 2017 to May 2021

Projects

UVM A.S.M.E. Team Stream

Aug. 2019 to Mar. 2020

- The American Society of Mechanical Engineers is an academic club at the University of Vermont that aspires to create the best community possible for engineering students.
- Prototyped aerodynamic designs for a Human Powered Vehicle to be entered in a competition hosted by the national chapter of A.S.M.E.

Personal Website Creation

Jan. 2021 to Current

- Learning programming through coursework created a great interest in further developing the skill.
- Used free time between fall and winter semesters to teach myself HTML and CSS to build a personal website.
- The goal of the website is to create a single location where all projects (school and personal), photography content, and general information can be found.

New Material for Hypersonic Leading Edge

Aug. 2020 to May 2021

- Senior design project, to create a holder that tests new permeable material concepts for hypersonic leading edges. Modifying an existing design to add the ability to monitor pressure and volumetric flow rate for the transpiration gas flowing through the material.
- Holder will be utilized in an Inductively Coupled Plasma Torch Facility and will undergo loads simulating re-entry into the upper atmosphere.
- Loads present were simulated on a model in ABAQUS to get an idea of how the holder would perform under these extreme loads.
- Compared the ABAQUS analysis to hand calculated results to see the correlation between the two.
- Used SCRUM to manage the project and create an organized list of goals as well as achievable deadlines.

Web Scraping Ski Buyers Guide

Nov. 2020 to Dec. 2020

- Used Selenium Webdriver with Python to scrape Evo.com to create an up to date dictionary of skis on the market organized by profile, function, gender, and skier level.
- The created dictionary was then used in a front end program to assign three pairs of skis to the user based on their inputted specifications.
- The front end also gave information on ski length and boot sizing based on user input.

Tandem Bike SolidWorks Model

Oct. 2020 to Dec. 2020

- Given the task to model a transportation vehicle using advanced drafting techniques learned in class during the semester.
- Modeled a tandem bike and wrote a formal report with part descriptions, dimensioned drawings, and bill of materials.

Activities

Backcountry Skiing/Hiking

Winter 2019 to Current

- Practicing correct backcountry etiquette for avalanche and medical safety with the overall goals of skiing good snow, staying healthy, and connecting with like-minded individuals.

Photography/Videography

Summer 2020 to Current

- Teaching myself the mechanics of good photography and videography for personal enjoyment to create memories that I can look back on for a long time.
- Using Adobe Creative Cloud to enhance my abilities.