**HENRY ROUTSON**

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FULL STOPS ?

High performing university student and software developer with extensive extracurriculars.

**EXPERIENCE**

**Open-source contribution**

[Cached File Explorer - in rust](https://github.com/conaticus/FileExplorer/commit/af927569de51a494ef7a85b62fb588fd10f751b6)  July 2023

* Isolated poisoned thread issue to minimal reproducible steps, and created a pull request bug fix which was merged into the project

**Aerospace and Rocket Engineering Society (**[**ARES**](https://eng.unimelb.edu.au/ares)**), The University of Melbourne**

Flight Simulations Team Member Jan 2023 – Present

* Supports creating rocket trajectory simulations to inform rocket ballast and airbrake deployment configuration in competition to get as close to 30,000 feet

Python Developer Jul 2023 – Present

* Automates trajectory optimization for rocket simulations to improve efficiency, reliability, and accuracy

React and TypeScript / JavaScript Developer Jan – Jul 2023

* Collaborated with industry software developers and Master of Computing students in React 3JS Fibre
* Implemented fins with a dynamic count into a 3JS 3D render

Operations Team Member (3D rendering – see below) Jan 2023 – Present

**Queen’s College IT Support**, **The University of Melbourne** 2022

* Supported350 students and staff across various technical issues

**EDUCATION**

**The University of Melbourne** Jun 2021 – Dec 2024

Bachelor of Science, Major in Computing and Software Systems

**Ballarat Grammar**  Sep 2020

* Academic scholarship (10%)
* VCE: Software Development, Specialist and Methods Mathematics, and Chemistry and Physics

**SELF-DIRECTED PROJECTS**

**CHelp - in C**  2023

https://github.com/HenryRoutson/CHelp

* Utilized meta-programming to track dynamic memory in C and improved debugging and bug detection abilities for C programmers
* Developed program that displays data and location of un-freed allocations on program completion, and allows checks for the number of different types of allocations

**AutoHeader - in Rust** 2022

https://github.com/HenryRoutson/autoheader

* Implemented “Public” keyword into the C programming language to automate the creation of header files.
* Uses automated testing and regular expressions.

**Leetcode competitive programming**     *2020 - Present*

<https://leetcode.com/HenryRoutson/>

* Solved 113 practice programming problems in numerous languages including Python, C and Rust.
* Posted solutions have over 1.5 thousand views.

***Soil Nutrient calculator - in* Python (VCE Software development)** 2019

<https://github.com/HenryRoutson/Soil-value-calculator>

* Architected GUI Software for a multi-million-dollar business after 5 months of learning programming.
* Performs Vector calculus to find the ideal compost for a particular soil and crop combination.
* This project remains in use, quantifying the product value to customers and continuing to improve their crop yield and quality.

**SKILLS**

Git SQL / Databases Data Structures and Algorithms Optimization Linux

**ACADEMIC PROJECTS AND PERFORMANCE**

**The University of Melbourne Subjects**

[IT Project](https://algorithms-in-action.github.io/) (JavaScript / TypeScript, React, HTML, CSS):

* Utilizes React to build on quicksort algorithm visualization software.
* Improved code standards and refactored stack visualization to significantly reduce code complexity.

Models of Computation (Haskell):

* My Haskell code was chosen as the solution for numerous practice problems within a cohort of 600

Computer Systems (C)

* Developed functional memory allocator for operating systems and a multi-threaded web server

Algorithms and Data Structures (C)

* Implemented a Quadtree, Linked list, Dijkstra and A\*

Foundations of Computing (Python)

* Achieved overall 98%, one of the highest marks in the cohort.

**Attached**

ARES 3D rendering work VCE software development

