

# PASCAL LASNIER

St. Catharine's College, Cambridge, CB2 1RL

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## EDUCATION

2024 – present	<b>Dept. of Computer Science Technology, University of Cambridge</b> (MPhil) Advanced Computer Science MPhil student		
2020 – 2024	<b>St. Catharine's College, Cambridge</b> (Undergraduate) Engineering, Class I BA (Hons) & MEng with Merit Aerospace and Aerothermal Engineering Mechanical Engineering		
2018 – 2020	<b>Richard Huish College, Taunton</b> (A-Levels) Mathematics (A*)      Computer Science (A*)      Physics (A*) Further Mathematics (A*)		

## PROFESSIONAL EXPERIENCE

**Siemens Cambridge Software Internship** | 2023 | C++, Rust (WASM), TypeScript

- 12-week summer internship at Cambridge office;
- Contributed to Siemens NX C++ codebase;
- Worked with dev tools team:
  - Wrote VSCode extensions to integrate with source control;
  - Implemented asynchronous client-server system in Rust using WebSockets.

## PROJECT EXPERIENCE

**4<sup>th</sup> year Engineering Project** | 2023 – 2024 | Python

- Individual project for MEng;
- Achieved First Class;
- Modelling of 1-D thermoacoustics networks:
  - Mathematical analysis of complex thermodynamics problem;
  - Involves constructing system as linear algebra problem using finite differences;
  - Implemented as Python API to generate solutions from thermoacoustic configuration and assumed partial solution.

**A-Level Computer Science NEA** | 2019 – 2020 | C# | [github.com/pylasnier/functional-studio](https://github.com/pylasnier/functional-studio)

- Designed an explicitly simply typed pure functional programming language, featuring:
  - functions as first-class citizens and higher-order functions,
  - selection and recursion,
  - a basic type system including integers, floats, and bools (arrays are possible as indexing functions, but no polymorphism or type constructors other than function types);
- Developed an intermediate representation (IR) that implements this language;
- Built a translator, including a tokeniser and a parser that produce the described IR, featuring a rich error system including type checking;
- Packaged the whole interpreter with a simple IDE built using Windows Forms.

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## EXTRA-CURRICULAR EXPERIENCE

### St. Catharine's College Badminton Club Captain | 2023 – 2024

- Ensured smooth-running of regular college training sessions;
  - Fostered inclusive and competitive environment for players to develop and grow;
  - Primary responsibility for club finances and competitive fixtures:
    - Managed club budget ensuring responsible consumption and spending on shuttles and restrings;
    - Organised weekly fixtures for intercollegiate league and tournament matches;
  - Oversaw success of the college team in intercollegiate competitions:
    - Maintenance of high league division (2<sup>nd</sup> of 7) with an almost entirely fresh roster of players;
    - High placements in the annual team elimination doubles tournament (Cuppers) – semi-finals in the mixed discipline, and champions in the women's discipline.
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## ACTIVITIES AND INTERESTS

<b>Languages</b>	English (native), French (proficient, GCSE Grade 9)
<b>Computing</b>	Linux (NixOS) user, command line-confident Programming: Rust, C(++), Haskell, C#, Python
<b>Music</b>	ABRSM Grade 6 Piano (Merit) ABRSM Grade 5 Music Theory (Merit)
<b>Sports</b>	Badminton (University Development Squad and college captain) Olympic-style Weightlifting
<b>Extra-curricular</b>	Duke of Edinburgh Award: Bronze (2019), Gold (ongoing) Volunteer at local library (Taunton)

**Referees available on request**