

PASCAL LASNIER

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

py@lasnier.com
+44 7521 986848
github.com/pylasnier

EDUCATION

2024 – present	Dept. of Computer Science & Technology, University of Cambridge (MPhil) Advanced Computer Science MPhil student
2020 – 2024	St. Catharine's College, Cambridge (Undergraduate) Engineering, Class I BA (Hons) & MEng with Merit Aerospace and Aerothermal Engineering Mechanical Engineering
2018 – 2020	Richard Huish College, Taunton (A-Levels) Mathematics (A*) Computer Science (A*) Physics (A*) Further Mathematics (A*)
2013 – 2018	Bishop Fox's School, Taunton (GCSEs) 7 Grade 9s (incl. Mathematics, Physics, Computer Science, and English Language)

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

4th 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.

2nd year Engineering Robot Project | 2021 | Arduino C++ | github.com/pylasnier/idp205

- Software lead of six-person team group project to design an autonomous robot;
- Task involved navigation within an arena to search and collect small dummies;
- Developed an understanding of the limitations of microcontrollers and how to work around them, especially memory constraints;
- Learnt alternatives for debugging a microcontroller system when breakpoints, watches, and other debugging features are not available.

A-Level Computer Science NEA | 2019 – 2020 | C# | 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 (2nd 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

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

Referees available on request