Peter Laszcz

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I am currently in my penultimate year of an Integrated Masters in Mathematics and Computer Science at the University of Birmingham. I have developed skills in software development and mathematical modelling through both employment and educational experience. I supplement my academic interests through personal and independent research and projects, and I wish to pursue a career in research with computer science and applied mathematics after I graduate.

Work Experience

Open Source Developer with Google Summer of Code (May-Sept 2025)

- Received a stipend from Google through organisation by the Python Software Foundation to develop features of Ilastik (Computer Vision software) under the mentorship of Research Software Engineers at the European Molecular Biology Laboratory (EMBL), Heidelberg.
- Operated within an international group with Agile methodology and Test-Driven Development.
- Delivered project progress updates at weekly team meetings.
- Merged a much-requested feature (physical pixel sizes) as a result of successful completion of the project.

Research Associate at the University of Birmingham (Oct-Dec 2024)

- Programmer and mathematical modeller for ARME, an EPSRC-funded project to develop a computational model for musician synchronisation in ensemble performance.
- Responsibilities included: researching novel synchronisation model literature; implementing models in multiple languages (Python, MATLAB, C++); performing model analysis with experimental data; managing the source code via Version Control Systems; providing code and model documentation; attending weekly team meetings to present updates and results.

Research Intern at the University of Birmingham Positron Imaging Centre (Jun-Aug 2024)

- Conducted computational experimental data analysis (using Python and MATLAB) on a fluidised bed system to aid development of a circular economy for plastics recycling.
- Analysed particle-tracking data to model fluid dynamics within the system, as well as utilising radiographs (via Convolutional Neural Networks) to locate and quantitively measure gas structures.
- Deployed and maintained software on the university's HPC system.
- Developed features of in-house particle data analysis software (up4-gui).
- Discussed the aims, progress, and impact of the research project with academics from the university and abroad at conferences.
- Yielded a 54% improvement in structure measurement over classical techniques, as well as enabling the analysis of additional bed structures.

Education

M.Sci Mathematics and Computer Science at the University of Birmingham (Sept 2023 – Jun 2027)

Penultimate year, graduating 2027. Predicted First Class Honours.

A-Levels at the Cardinal Vaughan Memorial School (Sept 2021 – Jun 2023)

Mathematics A*, Physics A*, Chemistry A, Further Mathematics B

GCSEs at St. Joan of Arc Catholic School, Rickmansworth (Sept 2016 – Jun 2021)

Achieved grades 9-7 (seven 9s, two 8s, one 7). Outstanding Achievement award in Mathematics and Computer Science.

Volunteering Positions

Secretary at University of Birmingham Disabled Students' Association (SANDAM) (2025 -)

- Minuting meetings and processing administration data.
- Communicating with student union and university administration, and collaborating with faculties, to raise awareness and promote accessibility for disabled students.
- Booking rooms to ensure meetings and events can go ahead.

Overseas Mobility Assistant with Diocese of Westminster Redcaps (2024)

- Worked in a team to provide wheelchair aid to mobility-assisted people in the French Pyrenees.
- Paired with a volunteer throughout, resulting in developed skills in one-to-one communication and fostering working relationships, as well as interpersonal skills with our mobility-assisted client.
- The work raised my awareness of social and infrastructure issues faced by mobility-assisted individuals.

Treasurer at Ruislip SVP and University of Birmingham G&S Society (2021-2022; 2023-)

- Collecting & processing financial and administration data, thereby strengthening proficiency in organisation.
- Collating receipts and invoices to produce and present reports and determine methods of managing costs.
- Working with event organisers to calculate budgets and apply for grants.

Young Scout Leader at 4th Eastcote Scout Troop (2021-2022)

- Planned and organised a weekly activity schedule with a team of leaders for a scout patrol, building confidence in project management.
- Ran schedule with patrol, bolstering skills in leadership and communication with large groups, as well as teamwork alongside my fellow Scout Leaders.

Non-Academic Achievements and Interests

- **Programming:** Proficiency in multiple programming (C, C++, Haskell, Java, Python, MATLAB) and markup (LaTeX, Markdown) languages. Project interests include Computer Vision, Natural Language Processing, and High Performance Computing. Experience in hackathons (BirmingHack 2024).
- **Institute of Mathematics and its Applications (IMA):** Associate Member.
- **Mathematics Engagement:** Previous engagement work has included mathematics aid at Peer Assisted Study Sessions, and secondary-level demonstrations with the IMA at a national science and technology fair.
- **University Societies:** Gilbert & Sullivan Society, Music Society, Maths Society, Computer Science Society, Student Disability Association.
- **Music:** Violin Grade 8, 12 years choral experience (recent performances include a collaboration with the BBC Singers, and at St. Paul's Cathedral, London), and 10 years orchestral experience (most recently performing in a tour in Sicily).
- **Dance:** Phoenix Morris Dancer and Fiddle Player; 7 years experience.
- **Scouting:** Member of REN Network Group; Gold Duke of Edinburgh Award holder.

Reference

Dr. Galane J. Luo (Personal Academic Tutor)

Lecturer in the School of Mathematics at the University of Birmingham

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