

# Proposal for FSCD 2025 in Birmingham, UK

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## 1 Introduction

We propose to host FSCD 2025 at the University of Birmingham (UoB), UK. UoB is one of the original ‘red brick’ universities in the UK and is a founding member of the Russell Group of leading British universities. The School of Computer Science (SoCS) at UoB has recently been ranked 3<sup>rd</sup> in the UK’s Research Excellence Framework.

The Theory of Computation group at UoB has a close relationship, both scientifically and socially, with the FSCD community. Together we have published dozens of papers at FSCD (and its predecessors RTA and TLCA and affiliated workshops), including 8 in just the last 3 years (2021–23). In fact one of our most successful projects, *Call-by-Push-Value* (by Paul Levy, one of the current proposers), was originally published at TLCA 1999. Members of our group have also organised affiliated workshops at past editions of FSCD, in-

cluding *Structures and Deduction* (SD) in SD 2017 and 2019, and HoTT/UF in 2021 and 2022. Without a doubt, FSCD is the conference that best represents our research expertise. In particular our research areas include:

- Lambda calculus (Martín Escardó, Dan Ghica, Paul Levy, Vincent Rahli)
- Type theory (Benedikt Ahrens, Martín Escardó, Eric Finster, Eike Ritter)
- Proof theory (Anupam Das, Sonia Marin, Eike Ritter)
- Quantum calculi (Miriam Backens)
- Modal logic (Anupam Das, Paul Levy, Sonia Marin, Eike Ritter)
- Category theory (Miriam Backens, Eric Finster, Paul Levy, Eike Ritter, Steve Vickers)
- Domain theory (Martín Escardó, Achim Jung, Paul Levy, Steve Vickers)
- Programming language semantics (Dan Ghica, Achim Jung, Paul Levy, Uday Reddy)
- Verification and model checking (Mirco Giacobbe, Vincent Rahli, Eike Ritter)

In recent years, our group has hosted other international conferences and events in Theoretical Computer Science, including CSL 2018, Tableaux 2021 and MGS 2023. The latter was held as a hybrid conference for which Anupam Das, one of the current proposers, was conference chair. This recent experience will be invaluable towards the organisation of FSCD 2025, and demonstrates a track record of success in conference organisation.

## 2 Conference chairs and local committee

We propose the following local organisational committee, all of whom are permanent staff at SoCS:

- Anupam Das (Associate Professor). Conference co-chair.
- Paul Blain Levy (Reader). Conference co-chair.
- Martín Escardó (Professor). Senior Consultant.
- Eric Finster (Lecturer). Hybrid/virtual chair.
- Sonia Marin (Lecturer). Workshop chair.
- Vincent Rahli (Senior Lecturer). Sponsorship chair.

In addition, SoCS usually has 3-4 postdocs and 10-15 PhD students at any one time working in topics relating to FSCD. We expect that most of these would be available to volunteer and assist with the conference organisation.

### 3 National, regional, and local government and industry support

The conference will enjoy effective subsidies from the University of Birmingham, by use of facilities, and various national grant funding bodies such as UKRI and EPSRC, by way of absorbing marginal costs into local grants. Other regional and national public funding bodies that we will approach for sponsorship include,

- British Logic Colloquium
- London Mathematical Society

who have sponsored UK conferences in recent years, e.g. the Proof Society Workshop 2019, Swansea (London Mathematical Society) and FSCD 2017, Oxford (British Logic Colloquium).

The UK has a particularly high capacity for industrial support thanks to several high profile industrial research labs in the country, including:

- Meta Research (London)
- Huawei (Edinburgh)
- Amazon Web Services (London)
- Microsoft Research (Cambridge)
- Standard Chartered (London)

These have sponsored conferences and events related to FSCD held in UK in recent years, including FLoC 2018, Oxford (Microsoft, Huawei and Amazon Web Services), MGS 2022, Nottingham (Huawei and Meta) and MGS 2023 (Huawei and Standard Chartered), and we shall approach them for sponsorship of FSCD 2025 too. We have particularly close links with the Huawei lab in Edinburgh, directed by Professor Dan Ghica who is also affiliated with UoB.

Finally we shall also approach international specialised research bodies, such as the ACM, IEEE, and EATCS, who have sponsored FSCD and/or similar conferences in recent years.

### 4 Accessibility to the location

UoB has excellent and affordable transport links by a variety of means, as we detail below. For reference, at the time of writing,  $\pounds 1 = 1.15\text{€} = \$1.24$ .

- There is a campus train station with regular connections to Birmingham centre (10 minutes). A return ticket costs  $\pounds 3.70$ .

- There are several bus services to the campus from various parts of Birmingham. A single bus ticket costs £2,<sup>1</sup> with significant reductions for repeated travel.<sup>2</sup>
- The Birmingham Airport (BHX) is a large international airport serving 81 non-stop destinations around the world.<sup>3</sup> It is connected by train to central Birmingham (15 minutes) and thereby to the campus (30-40 minutes including connection). The price of a single journey from BHX to the city centre is only £4.60 (£5.10 for the University campus).
- Beyond BHX, there are several large airports in London (Heathrow, Gatwick, Stansted, Luton) and elsewhere (Manchester, Bristol) which have 2-3 hour train connections to Birmingham. Flexible return tickets cost £50-£80 (depending on the airport), with cheaper options available if booked in advance. There are also much cheaper coach connections available via National Express.

Let us also point out that UoB and the proposed venue supports a variety of accessibility needs for those with disabilities, including ramped access, lifts, accessible toilets and assistive listening. Further accessibility information can be found at: <https://www.accessable.co.uk/university-of-birmingham/access-guides/aston-webb-c-block>.

## 5 Proposed dates

We propose to host FSCD 2025 during one of the following two weeks:

- 30 June–6 July; or,
- 7 July–13 July.

These dates are outside the teaching period at UoB and many other universities, facilitating both participation and access to campus facilities, potentially including access to dormitories for student participants (subject to request). There are no public holidays during this period.

At the same time, UK schools are still teaching in early/mid July, so flight and hotel prices remain reasonable. (See Section 9 for further details).

Over the week, we propose the same conference/workshop format as for various earlier FSCD editions: we will host affiliated workshops on the Monday, Saturday and Sunday, with the main conference running Tuesday – Friday.

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<sup>1</sup>Sale price until June 2023.

<sup>2</sup><https://nxbus.co.uk/west-midlands/tickets-prices/single-trips-day-tickets>

<sup>3</sup><https://www.birminghamairport.co.uk/destinations-and-more/where-we-fly/>

## 6 Estimated costs of registration

In this section we estimate costs for the conference based on similar recent events hosted at UoB. We also compare them to the analogous costs for the 2017, 2019 and 2023 editions.<sup>4</sup> All price estimates are for the time of writing, not predicting future inflation. Again, at the time of writing  $\pounds 1 = 1.15\text{€} = \$1.24$ .

We estimate the following registration costs:

- Conference:  $\pounds 460$  (about 530€, \$570)
- Conference (late registration):  $\pounds 530$  (about 610€, \$670)
- Conference (student):  $\pounds 300$  (about 345€, \$372)
- Workshop (per day):  $\pounds 40$  (about 45€, \$50)

The conference registration cost is based on CSL 2018 registration costing  $\pounds 380$  per participant (and running for 4 days too) and accounting for inflation. This price includes lunches, conference dinner and excursion, but does not include workshop participation (which is addressed below). The estimation for late registration is based on about a 15% increase from usual registration, similar to earlier years 2017, 2019 and 2023. For comparison (early) conference registration cost  $\pounds 400$  in 2017 ( $\pounds 460$  after inflation), 480€ in 2019 (575€ after inflation), 540€ in 2023.

Subsidies for student registration are budgeted for in the calculation above and, as has been standard for recent editions of FSCD, the cost is roughly 2/3 of normal registration.

Workshop registration will be priced per workshop-day. Our estimated cost is a little cheaper than previous years (e.g.  $\pounds 40$  at Oxford 2017 ( $\pounds 50$  after inflation), 80€ at Dortmund 2019 ( $\pounds 95$  after inflation), 110€ at Rome 2023), since many organisational costs will be absorbed by the University of Birmingham. This price will cover breaks and lunches ( $\pounds 25\text{--}\pounds 35$ ), with any remaining money handed to workshop organisers to subsidise (invited) speakers and/or students.

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<sup>4</sup>2016 information does not seem to be publicly available, 2018 took place at FLoC so was more expensive than usual, 2020 and 2021 took place during the pandemic so were atypical.

## 7 Conference and exhibit facilities



Aston Webb Building

We propose to host FSCD 2025 in the famous Aston Webb building, one of the oldest of the University. The building includes the following lecture theatres and rooms:

- G33 Lecture Theatre. (Capacity 60)
- Main Lecture Theatre (C-Block). (Capacity 260)
- Lecture Theatre WG5 (Capacity 188)
- Lecture Theatre WG12 (Capacity 60)
- Dome Lecture Theatre (Capacity 97)
- LG04 (Capacity 53)

We expect to use the Main Lecture Theatre for the plenary sessions, and one of the other lecture theatres to host parallel sessions. Workshops and tutorials can take place in the smaller rooms/theatres.

As well as the Aston Webb building, there are several other options available on campus where conferences have been organised, including the Chemical Engineering Building and the Teaching and Learning building, with similar rooms and facilities.<sup>5</sup>

Internet connectivity is available throughout the UoB campus via Eduroam. There is also a Guest WiFi for users without Eduroam, for which accounts can be set up individually at the point of registration.

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<sup>5</sup><https://intranet.birmingham.ac.uk/as/libraryservices/lrat/room-information/index-new.aspx>

The conference will include lunches and coffee/tea breaks provided by UoB catering service Food Fellows.

Finally, the conference organisation will benefit from the help of professional staff from UoB, in particular including the Research Support team at SoCS and the LRAT team for audio-visual and hybrid support.

## 8 Support for hybrid attendance

University of Birmingham has excellent hybrid facilities that may be fitted into any of the lecture theatres and rooms available for the conference at short notice. In particular, the proposed lecture theatres in the Aston Webb building are already hybrid-ready.<sup>6</sup> Our proposal is to stream talks online, with virtual participants engaging via a chat room. Thanks to hybrid facilities and Zoom licenses provided by the University of Birmingham, virtual participants (who are not speakers) would not be asked to pay a registration cost.

If there is any reason that the proposal above becomes impractical, e.g. due to a sudden COVID wave or anything else, as mentioned earlier, a workable hybrid set up can be implemented on short notice. We will have a dedicated ‘hybrid/virtual chair’ to plan for all situations.

## 9 Residence accommodations and food services

There is a large hotel quarter in central Birmingham with considerable options at £50–100 per night. There is also the campus Edgbaston Park Hotel, where we intend to block book rooms for the conference. These are available at £75 per night. Being the UK’s second largest city, there are also several youth hostels and AirBnB options available too. There is also the potential to reserve student dormitories on or near campus. We will look into block booking a number of these well in advance of the conference.

Various food outlets are available on campus, at reasonable prices (£4–£7). Within walking distance, the residential areas of Selly Oak and Harborne offer food options for all tastes and budgets, including Indian, Chinese, Korean, Italian, Iranian and fusion cuisine. Birmingham contains one of the largest Chinatowns in Europe and the famous Balti triangle. For the conference dinner, many of these venues would be suitable.

Vegetarian, vegan and gluten-free options are typically available at all restaurants and eateries in the UK (including the areas above) and are usually clearly marked on menus.

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<sup>6</sup><https://intranet.birmingham.ac.uk/as/libraryservices/lrat/technical-advice/bimodal-teaching-rooms.aspx>

## 10 Other relevant information

Birmingham and the surrounding region boasts many cultural and historical activities. Some of the excursion options include:

- The Black Country Living Museum in nearby Dudley is an award-winning open air museum that tells the story of one of the very first industrialised landscapes in Britain.
- Warwick Castle is a mediæval castle dating from the time of William the Conqueror (1068). With layers added throughout the ages, a visit here is a tour through English history.
- The market town of Stratford upon Avon, a short train ride away, is the famous birthplace and burial place of William Shakespeare and a popular tourist destination.
- The Malvern hills, another short train ride away, has been designated as an area of outstanding natural beauty, and is ideal for hiking.
- A visit to Shrewsbury, the county town of Shropshire, is another picturesque option, with its mediæval street plan and numerous historic buildings.

Tourist attractions include:

- Cadbury World, a short walk from the University, which includes an exhibition tour of the history of chocolate consumption and manufacture, and the Cadbury company for which Birmingham is famous.
- The Birmingham canal network is one of the most intricate in the world with 100 miles of canals and extensive walkways. It connects the city centre with its restaurants and nightlife to the University campus, and leads out to rural areas and historic architecture.
- The National Sea Life Centre, located in central Birmingham, hosts a wide variety of marine life and educational exhibits.
- The Museum of the Jewellery Quarter showcases the history of this famous part of Birmingham, which contains one of Europe's largest concentrations of jewellery manufacturers and businesses.

Many other activities and attractions can be found at <https://visitbirmingham.com/things-to-see-and-do/attractions>.