Proposal for an IIF workshop on Open Source Forecasting

15 November 2024

In the field of forecasting, the use of open-source forecasting software has become increasingly dominant throughout the entire forecasting workflow. These tools have played a pivotal role in democratizing access to advanced forecasting capabilities. While forecasters often switch between forecasting tools as needed, the development of these forecasting tools happens in relative isolation. To improve collaboration across forecasting software, we are delighted to propose a IIF sponsored workshop that unites developers for sharing and discussing the latest ideas in forecasting software. The workshop is to be held on June 26-27th 2025 (immediately prior to ISF) in Beijing, China.

Revised proposal

This workshop was originally proposed in 2024 but has been substantially reworked with a narrower scope to reduce costs and focus discussion topics. This section aims to summarise these revisions, which address the feedback from the original proposal.

Similar to the previous proposal, the workshop is to be run immediately prior to and near the ISF conference in Beijing (reducing travel costs and increasing invitee availability). The workshop duration has been reduced from five days to two. The two tutorial days have been completely removed (software training is adequately covered by the ISF tutorials). The final day of open problems and future work has been condensed into short talks at the end of each day. This reduced 2-day program has also refined the workshop topics (detailed below) to be focused on improving forecasting software design, sharing new forecasting features, and discussing future software needs in forecasting. The program is designed to foster collaboration in forecasting software development across the various tools, frameworks, and languages in use.

The expected participants have been reduced from 50 to a maximum of 30 participants by invitation only. Special care is being taken to ensure participation from a diverse, knowledgeable and collaborative group. We expect roughly equal participation from academia and industry, with invitees across all career stages from around the world. With the ISF conference (and this proposed workshop) being in Beijing, we invite forecasters from large Chinese technology firms including Alibaba, Tencent and ByteDance. We have allocated funding in the budget to support travel and accommodation for invitees who are early-career forecasters (ECFs) or members of under-represented low-SES groups within the forecasting software community.

These changes have allowed for a significantly reduced budget, from US$26,000 to approximately US$12,000. This includes the elimination of workshop fees, and reduced reliance on third-party sponsorship. We are requesting a maximum of US$10,000 from the International Institute of Forecasters (IIF) to fund any expenses not covered by sponsors.

Notably the organizing committee has been restructured with clearer roles and responsibilities of each member. Mitchell O'Hara-Wild has taken the initiative of coordinating the committee and event (originally Bahman Rostami-Tabar), and Xiaoqian Wang has joined to provide local support in Beijing.

An additional outcome of this workshop (beyond software contributions) could be a special issue on forecasting software in the IJF, featuring recent advancements in forecasting software methods and design. If this is of interest to the IJF, this workshop could be used to encourage submissions to the IJF for this special issue.

Key details

[MITCH TODO, 1-paragraph summary of workshop planning details]

Table 1: *Key proposal details*

Date	June 26-27th 2025 (Thursday-Friday before ISF2025)
Location	Haidian District, Beijing, China (venue TBC)
Maximum participants	30
Budget	US$12,000

Organizing committee

General chair

- Mitchell O'Hara-Wild (PhD student at Monash University and consultant at Nectric, Australia)

Programme chair

- Ivan Svetunkov (Lecturer at Lancaster University, UK)

Event coordination

- Bahman Rostami-Tabar (Professor at Cardiff University, UK)

Local logistics

- Xiaoqian Wang (Research Fellow at Monash University, Australia)

Invitations and general support

- Azul Garza Ramirez (CTO & Co-Founder at Nixtla, Mexico)
- Resul Akay (Head of Data Science at Quantics.io, Austria)
- Shanika Wickramasuriya (Assistant Professor at Monash University, Australia)

Workshop aim

During this 2-day workshop, our focus will be on exploring the most recent advancements and advanced capabilities within open-source forecasting software. Furthermore, we will engage in discussions about the future possibilities of these tools. Our main goal is to empower participants by enhancing their skill-sets and providing a deeper understanding of the current opportunities. Through fostering conversations on best practices, and recognizing potential areas for improvement, we aim to facilitate research collaboration and foster partnerships with open-source software developers.

Workshop format

The workshop format is designed to stimulate discussion and sharing of ideas, and subsequent collaboration in the creation, design, and use of open-source forecasting software. Substantial time in the program is dedicated to discussion, both formally after presentations and informally during breaks and at the reception. With a maximum of 30 participants, we hope to foster a small collaborative environment which encourages in-depth discussion about creating forecasting tools.

Core topics for the workshop include:

- Forecasting frameworks design (fable, sktime, statsforecast, ...)
- Large forecasting models (foundation models, neural networks, ...)
- Exploratory time series analysis (data, visualisation, evaluation, ...)
- Future developments for forecasting software (current plans, open problems, ...)
- Forecasting at scale (hierarchical, big data, optimisation, ...)

The program allows for a total of 12 in-depth presentations and 8 short talks with plentiful time for discussion and Q&A.

25th June 2025

- 5:00pm - 7:00pm: Welcome reception / social event (TBC)

26th June 2025 (day 1)

- 9.00am – 10.30am: Session 1 (2x30min presentations, 2x15min discussion)
- 10.30am – 11.00am: Morning tea
- 11.00am – 12.30pm: Session 2 (2x30min presentations, 2x15min discussion)
- 12.30pm – 1.30pm: Lunch
- 1.30pm – 3.00pm: Session 3 (2x30min presentations, 2x15min discussion)
- 3.00pm – 3.30pm: Afternoon tea
- 3.30pm – 5.00pm: Open problems (4x20min short talks)

27th June 2025 (day 2)

- 9.00am – 10.30am: Session 1 (2x30min presentations, 2x15min discussion)
- 10.30am – 11.00am: Morning tea
- 11.00am – 12.30pm: Session 2 (2x30min presentations, 2x15min discussion)
- 12.30pm – 1.30pm: Lunch
- 1.30pm – 3.00pm: Session 3 (2x30min presentations, 2x15min discussion)
- 3.00pm – 3.30pm: Afternoon tea
- 3.30pm – 5.00pm: Open problems (4x20min short talks)

Budget and funding

The revised proposal has a total budget of US$12,000, with the majority (US$8,000) dedicated to supporting the travel and accommodation of early-career forecasters and invitees from low-SES backgrounds (by application).

The funding model for this workshop has been reworked, with the intention to secure additional funding from third-party sponsors rather than registration fees. To encourage participation from invitees, there is no registration fee for participants. Participants are expected to fund their own travel and accommodation, where travel expenses should be negligible for those already attending ISF.

Table 2: *Estimated budget*

Expense	Number	Unit Price	Total
Catering	30	US$50	US$1500
Venue hire	2	US$1000	US$2000
Travel and accommodation support: ECF	8	US$500	US$4000
Travel and accommodation support: Low-SES	4	US$1000	US$4000
Miscellaneous expenses			US$500
Total			US$12000

We are requesting a grant of up to **$10,000** from the IIF to fund this workshop, to cover any portion of the budget not funded by third-party sponsors.

Invited participants

This workshop provides a unique opportunity to bring together a diverse, knowledgeable, and collaborative group of forecasting professionals. We are striving for a balance between academia and industry, with a focus on engaging participants from a wide range of career stages and backgrounds. Many invitees of this workshop are familiar faces at the ISF conferences, however this year's ISF in Beijing presents an exciting outreach opportunity to engage forecasters from Asia who are under-represented in the IIF. In particular, we have invited several developers from large Chinese technology firms, including Alibaba, Tencent, and ByteDance. Diverse participation in this workshop will create rich and varied discussions about the latest forecasting innovations.

We hope that this workshop will foster greater collaboration not only across different programming languages but also among developers from around the world, bridging communities that seldom interact due to language barriers. To support attendance of under-represented groups, we have allocated funding for the travel and accommodation of early-career forecasters (ECFs) and individuals from low-SES backgrounds, helping us build a more inclusive and global community of forecasters.

Below is a tentative invitation list:

- Arjun Ashok (Python, Academia, Industry, Software)
- Han Wang (Python, Industry, Applications)
- Haixu Wu (Python, Academia, Applications)
- Joaquín Amat Rodrigo (Python, Industry, Software)
- Lorenzo Stella (Python, Industry, Software, Applications)

- Matt Dancho (Python, R, Industry, Software)
- Gerald Woo (Python, Industry, Academia, Software)
- Yibei Hu (Python, Industry, Applications)
- Zisheng Sun (Python, ByteDance Inc., Applications)
- Songtao Li (Python, Apple Inc. China, Applications)
- Chen Chen (Python, Meituan, Applications)
- Daniele Girolimetto (ECF, R, Academia, Developer)
- Yangzhuoran Yang (ECF, R, Academia, Developer)
- Bohan Zhang (ECF, R, Python, Academia, Developer)
- Lan Jiang (ECF, Python, R, Academia, Industry, Applications)
- Shiyu Wang (Python, Industry, Industry, Applications)