

# A Proposal for Hosting FSCD 2021 in Minneapolis

## Kuen-Bang Hou (Favonia) and Gopalan Nadathur

*This document has clickable links in it that provide more detailed information relevant to evaluating the proposal. We therefore advocate reading it through a PDF viewer on a device that is connected to the internet.*

We make a case in this document for holding the *Formal Structures for Computation and Deduction* in Summer 2021 at the University of Minnesota. There are several aspects that make this an attractive proposition. The University of Minnesota is amongst the top public institutions for higher education and research in the United States, with a strong commitment to diversity and a history that goes back over 160 years. The conference and associated workshops will be held in a lush green campus on the banks of the Mississippi river that offers opportunities for walks and visits to historical buildings and museums between technical sessions. The city is well-connected with non-stop or one-hop flights to most metropolitan locations around the world. Minneapolis and the adjacent city of Saint Paul are genuine “big cities,” with scores of social and cultural activities for those who want to look beyond the confines of the campus and the conference. There are also significant opportunities for outdoor activities like biking and canoeing in one of the many lakes in Minneapolis. For the even more adventurous, there is the possibility of pre- or post-conference activities such as hiking on the Superior Hiking Trail along Lake Superior or canoeing in the famous Boundary Waters Canoe Area adjoining the border with Canada.

In the rest of the document we provide information concerning the details that were requested to be covered in a proposal to host the FSCD conference.

## 1 Conference Chairs

Professors Kuen-Bang Hou (Favonia) and Gopalan Nadathur, Department of Computer Science and Engineering, University of Minnesota.

## 2 Local Committee

The Conference Chairs will double up as the Local Committee Chairs; they prefer a common designation because of a shared interest in all aspects of the conference organization. Membership in the Local (Organization) Committee is still to be decided. The department has an active graduate program and we will draw on those in the programming languages and software engineering areas to provide the initial pool of volunteers for the conference.

## 3 Organizational and Financial Support

The conference will be organized under the aegis of the University of Minnesota Software Engineering Center (UMSEC) that has also offered to take charge of all the financial aspects. The Institute for Mathematics and its Applications (IMA) at the University of Minnesota

has also made a commitment of support; this commitment consists of the sponsorship of one invited speaker and the use of an auditorium under their jurisdiction for the duration of the FSCD event. Letters indicating the involvement of these two entities are included with the proposal.

We have approached Amazon Web Services, Rockwell Collins, and Honeywell, three local industrial establishments with interests in program analysis and formal methods, for financial support for the conference. We have indications of interest from these organizations although no firm commitments have been made yet. IMA has also indicated that it will solicit financial assistance from its industrial affiliates.

We have inquired about support for the conference from the National Science Foundation (NSF) and the Air Force Office of Scientific Research (AFOSR). We have gotten positive responses from both but concrete commitments will have to wait till this proposal has been approved and till about a year before the event. We expect that any support that we might get will be directed towards student travel awards, subsidies for student registration and publication costs. Student support may be limited to U.S. participants and it may also be conditioned on complementary awards from the research organizations of individual European countries or the EU as a whole. We will contact particular members of the FSCD community to make requests for such awards if this hosting proposal is approved. Help from the FSCD Steering Committee in identifying relevant individuals for this purpose would be greatly appreciated.

We intend to seek an in-cooperation status with the ACM, perhaps from the SIGLOG chapter; again, this matter can be advanced only after a hosting decision has been made.

## 4 Location of Events and Adequacy of Facilities

Our current intention is to host the conference and associated workshops in Keller Hall, the home of the Department of Computer Science and Engineering at the University of Minnesota. We intend to use lecture theaters and classrooms in the building for the technical sessions. All the rooms are equipped with modern projection facilities, either using TV monitors or, for the larger lecture theaters, a large white screen. All the rooms also have adequate microphone facilities. Keller Hall is fully accessible and it also has a gender-neutral restroom on the same floor as the lecture theaters/classrooms that we plan to use for the conference.

Teaching schedules can sometimes interfere with the availability of rooms in Keller Hall. In light of this, we have chosen to hold the conference in the summer months, some time in June or July that will be coordinated with LICS and CADE when they are in a position to discuss dates, when fewer courses are offered. Even this is not guaranteed to eliminate clashes and we will be able to determine this only closer to the event itself. We will resolve the dilemma this poses in the following way:

1. The conference sessions will be held during weekdays, using the seminar room guaranteed to us by IMA as the default location. This room is capable of holding up to 130 people, although 100 is closer to its optimal capacity. (Information about the room can be found at the URL <https://z.umn.edu/imaspace>.) There is a better configured lecture theater in the building that we will switch to if we are able to reserve it

for the four days we need it closer to the event. Similarly, there is a larger room with capacity of 250 that can be used if registration exceeds our wildest dreams.

2. The workshops will be held over the weekend, either before or after the conference itself. The classrooms and lecture theaters are likely to be unassigned during those days. There are three classrooms of capacity at least 50 and three more seminar rooms/lecture theaters of higher capacity in the building and we should therefore be able to accommodate at least six workshops each day.
3. In the event that we have more than six workshops a day or that there is an unanticipated clash in the demand for the rooms in Keller Hall, there is other such space in nearby buildings that we should be able to avail of to resolve the issue. We have an assurance from the Office of Classroom Management that they will work with us to find such space.

There is space in Keller Hall around these rooms that will suffice for setting up registration desks, a few exhibits (such as those of publishing houses) and tea and coffee tables to serve about the 125 people that we anticipate seeing each day of the event; the Privacy Enhancing Techniques Symposium (PETS) was held in the same space in 2017 and it had 150 registrants. In addition, there is meeting space around the rooms that is usually employed as study space by students but that will be relatively free during the summer months and therefore available for use for discussions by conference participants. However, space will be tight for also housing posters and demos during the conference. We have investigated alternative space that can be rented for this purpose in a building that is about 5 minutes walking distance away. Should we want to accommodate posters and demos during the conference, there will have to be a dedicated session for this purpose so that we can limit space rental to a single block. The impact on the registration fee can be limited to a few dollars if this guideline is followed.

The proposal above is based on utilizing space that would be available to us for a nominal fee, something that we have deemed necessary in order to keep registration fees at a reasonable level. We have also checked rentable space at various places on the campus that are specifically dedicated to hosting events like this conference and the workshops.<sup>1</sup> One example of such space appears at the URL <https://z.umn.edu/coffmanspace>; all the enclosed spaces shown on this page can be re-configured for a conference or workshop session, with the exception of the theater and the whole music club. The cheapest and perhaps the best of these options will cost about \$4500 for the conference and about \$500 per workshop. We do not detail an alternative plan using rented space here, but all the information is in place to articulate such a plan if it is deemed to be necessary. Obviously, having to rent space will have a significant impact on the budget and therefore on the registration fee.

Finally, we note that while the call for proposals suggests that we plan for around 200 registrants, this seems not to be consistent with the actual data that we have obtained from

---

<sup>1</sup>Use of classrooms during the weekend incurs a fee that we have accounted for in the budgeting for workshops. Some charges may be involved if we need the audio-visual personnel to be at hand during the conference and workshop sessions. We have not been able to ascertain what these charges might be and also if they are really needed. We have not accounted for such service in our budget, assuming that it will either be available free-of-cost or that we can do without it during the event.

past occurrences of the conference: these numbers have been 122 (2016), 105 (2017) and 100 (2018). If there are unanticipatedly high registration numbers for workshops on any given day, we should be able to solve this problem by distributing the workshops across buildings in close proximity. While this may not be an ideal solution, it is difficult to guarantee optimality when registration numbers are not known sufficiently in advance and they have fluctuated significantly in the past.

## 5 Parallel Sessions, Connectivity and Demo Facilities

We have earlier described the structure we envisage for the events around FSCD 2021: a single session for the conference talks lasting three and a half days, preceded or followed by workshops that are run in parallel. This seems to have been the structure for FSCD 2017 and FSCD 2018 and it is the one that we are certain to be able to accommodate with minimal cost for rooms. We may be able to accommodate parallel sessions during the conference at minimal additional cost but we would know this only closer to the event date. We will certainly be able to accommodate parallel sessions if we are willing to pay for room rental, but this could raise the registration fee by about \$100. Given the past record, we have considered it best to investigate this matter only after we have determined a changed structure is essential, noting that there will be an associated cost.

Keller Hall is wired to provide internet connectivity via `eduroam`, something that will suffice for most participants. We will also be able to set up guest wireless accounts for all registrants for the duration of the conference. There are several labs in the building with workstations and we should also be able to set up guest accounts for logging into the network through these. Even though there will be fewer students on campus during the summer months, we have been told that there are often workshops run as part of outreach programs that may compete for the use of these workstations. The issue is resolvable but we will have to wait till closer to the conference date to have a specific solution. We will need to provide charging facilities for participants, an issue that can be solved at least by purchasing power strips and setting them up in the lecture theaters and meeting spaces. Finally, we should be able to rent monitors and workstations that might be needed for demos from the Department of Computer Science and Engineering. We have included a nominal amount to meet these various needs in our budget calculations. This amount will be revised once the details of what is needed are known.

## 6 Travel to Minneapolis

The main point of entry to Minneapolis, especially for travel from Europe, Canada or other metropolitan centers in the United States, is the Saint Paul and Minneapolis airport (MSP). This is a well-connected airport that, in fact, serves as a hub for travel to various destinations in the US. For non-US travellers, who we anticipate will constitute a significant portion of the conference attendees, we note that there are direct flights into MSP at least from airports in London, Paris, Frankfurt, Amsterdam, Reykjavik, Dublin, Tokyo and Seoul. There are, in addition, convenient one-hop flights from locations that are too numerous to list here.

Summer constitutes a peak period for travel into the US from international destinations

and fares are therefore usually higher than at other times during the year. Even so, these fares can be kept manageably low with some advanced planning. To provide some examples, fares for non-stop flights that were available on March 28, 2019 for travel between June 23 and 30, 2019 were \$581 from Reykjavik, \$786 from Frankfurt, \$851 from Dublin, \$1000 from London, \$1041 from Paris, and \$1169 from Amsterdam. Delta Airlines, which partners with other airlines like KLM and Air France, has a major presence at MSP. The airport is also served by lower-cost airlines such as Condor, Icelandair, Southwest and Sun Country. Icelandair in particular provides flights that go through Reykjavik to many major cities in Europe.

The Minneapolis campus of the University of Minnesota, the proposed location for the events constituting FSCD 2021, is connected to the airport by a convenient light rail system that is described later in this proposal.

## 7 Accommodation and Local Transportation

We have considered two options: hotel accommodation and accommodation available through university housing.

We have attached to this proposal a rate sheet that we have obtained for university housing for Summer 2019; some details about such housing is available at the URL <https://z.umn.edu/res-housing>. These rates will change for 2021 but the University Conference and Event Services office that organizes these rentals assures us that they will not change by more than 5% per year. Our colleagues who organized PETS arranged for space in the private room/shared bath category in Centennial Hall and we gather from them that this worked well for the attendees of their conference. This space is available only in the summer months when students are not on campus, which is another reason for preferring this time for the conference. There is better availability in June than in July, an issue that should factor into the dates that we settle on eventually for the event. However, space for up to 50 registrants should be possible to arrange even in July. The rooms can be set up with a breakfast option, something that will raise the rates by about \$5-\$10; note that the conference budget that we discuss later *will not* include breakfast.

There are several hotels around the university campus. Some examples are the Graduate Hotel, DoubleTree (Hilton), Days Inn, Courtyard Minneapolis Downtown, and Aloft Minneapolis. There are other options as well and at a variety of price points distributed around Minneapolis and St. Paul. The light rail system that is mentioned later makes many of these hotels easy to access from the university campus.

The on-campus accommodation and several of the mentioned hotels are within walking distance of Keller Hall, the proposed venue for the main events. The downtown areas in Minneapolis and St. Paul are accessible from these locations via the light rail line that connects them while running through the campus. This line also connects to another one that runs to the airport. The public transportation system in the Twin Cities area in general offers a reasonable option for getting around. The cities also have a bike share system that can add some fun to exploring the area in addition to providing exercise and recreational options. Finally, Lyft and Uber are operative in the city as also is a competitive taxi service.

## 8 Recreational and Cultural Possibilities in Minneapolis

Minneapolis and Saint Paul, collectively known as the Twin Cities, have a vibrant musical and theater culture. Classical music buffs would have heard of the Minnesota Orchestra, located in Minneapolis, and the Saint Paul Chamber Orchestra. Opera aficionados might take interest in the Minnesota Opera. The theater landscape is too crowded to describe in detail—the Twin Cities is reputed to be amongst the most theater-active metropolitan areas in the US. To provide just a taste, the Guthrie Theater has a prominent presence in Minneapolis and there are also several smaller, possibly experimental, theaters such as the Penumbra, Mixed Blood Theater, Pangea World Theater, and the Southern Theater; another glimpse of the available fare can be obtained at the URL <https://z.umn.edu/mpls-theatre>. Minneapolis is home to the Film Society of Minneapolis St Paul that presents movies that are off-the-beaten-track at the historic St Anthony Main Theatre. A similar fare is also served at many of the Landmark Theatres that are located at various places in the city.

While one might not be attracted to the Twin Cities area purely on the basis of its museums, there are a few that might merit a visit during a trip there. These include the Weisman Museum, which is housed on the University of Minnesota campus in a building designed by Frank Gehry, the Walker Art Center, especially its Sculpture Garden, and the Minneapolis Institute of Art.

A major attraction of the Twin Cities area is the opportunity it provides for outdoor activities. Minnesota sports the nickname “the land of 10,000 lakes,” and Minneapolis plays its role in justifying this name. Three attractive lakes within the city area are Lake Harriet, Bde Maka Ska and Lake Hiawatha. Another popular lake in the vicinity is Lake Minnetonka. These various lakes offer opportunities for canoeing and yachting. Various parks dot the city, providing possibilities for walks, jogs and bike rides. The Mississippi river runs through the University campus and there are picturesque walking and jogging paths alongside the river that are easily accessible from the residence halls. The Twin Cities is by reputation one of the best places for biking. In addition to urban bike lanes, there are the Grand Rounds Scenic Byway, the Midtown Greenway, and numerous other trails, which connect the campus, the downtown, and the scenic Chain of Lakes and Mississippi River. There is a bike-sharing program called Nice Ride that simplifies access to a bike, and there are bike racks on every bus or train car. The Minnesota Valley National Wildlife Refuge is another local attraction that can be approached easily from the university campus and the city.

Micro-brewing has become a major industry in the US over the last two decades and Minnesota has played its part in developing this trend. Thanks to a new bill in 2011, nicknamed the “Surly Bill” after a pioneering brewery located in Minneapolis, there is currently a boom of local, smaller breweries in Minnesota, and the beer culture has been rapidly expanding. Many of these breweries offer tours and they often have a beer hall attached where one can sample their products.

We have limited attention to attractions around the Twin Cities in this proposal. There are many opportunities for outdoor adventures outside the city that can become the basis for combining a vacation with a trip to the conference. Two such possibilities were mentioned in the introduction to this proposal and some help can be provided for identifying others at

a later point in time. Ideally, we would like to integrate an excursion, in the form of a trip to a lake, a biking tour or a visit to a micro-brewery, into the schedule for the conference.

## 9 Budgetary Considerations

We made the decision at this early stage of accounting to separate out the calculations for the conference and the affiliated workshops. This is because the conference has some necessary costs, such as funding for invited speakers and for publications, that should not be reflected in the workshop registration fees. Conversely, we expect the workshops to be self-sustaining: we do not want to tax the conference registrants especially in light of the much more unpredictable numbers associated with each (possibly new) workshop.

In light of this decision, we show the cost estimates for the conference and for workshops separately.

### 9.1 Conference Budgeting

One key issue to be decided on is a good estimate of the number of registrants for the conference across whom the common costs have to be shared. FSCD 2018 had 100 registrants and FSCD 2017 had 105. For 2021, we had also to reckon with the fact that the conference is not being held in Europe; higher travel costs could have the impact of decreasing the number of registrants. We have therefore settled on the number 80 to draw up these initial estimates.

We would like to provide a reduced registration fee for students. We have asked past conference chairs for information on the distribution between student and non-student registrants. Not having received this information yet, we have decided to assume an even distribution for the calculations we present; these calculations may have to be changed as real data becomes available to us in the future.

Another issue concerns external financial support for the FSCD event. There is the possibility of such support in a variety of forms that could impact on the quality and the cost of the meeting in different ways. We discuss this aspect more fully later in this subsection.

#### 9.1.1 Costs to be Amortized Across Participants

The different components that we envisage in this category are presented below along with associated estimates:

1. Support for invited speakers. Assuming a limit of 3 such speakers, we have bounded this cost at \$6000.
2. Proceedings publication, publicity, awards and registration material costs. We have estimated this at \$6000. A significant chunk of this will be LIPIcs charges for the proceedings, which we understand at 60 Euros per paper; bounding the number of papers at 42, this component amounts to about \$3000. Note that we have not included costs for providing the proceedings on a USB stick in this estimate. Our calculation of the registration fees may be impacted if this is deemed necessary.

3. Expenses for configuring power outlets, internet connectivity, and technical support personnel. We have estimated these expenses at \$2000.
4. Registration processing fees. This aspect will be managed by the DORS system at the University of Minnesota. We will be charged a fee that will be a percentage of the transaction amount. By a retro-fitting process based on the figures in this proposal, we have estimated this cost to be about \$1700.

The total of these different estimates that must be distributed across the registrants at the conference is \$15,700. We note that this represents a minimal figure. For example, it does not include funds for renting rooms and workstations, such as might be needed for a demo and poster session. We wait to understand the needs of the conference better before factoring these costs into our calculations.

### **9.1.2 Costs Attributable Individually to Participants**

These expenses are essentially for food served during the conference. In estimating them, we have assumed a conference of four days with one afternoon off either at the end or in the middle to accommodate an excursion into the city. The subdivision is as follows:

1. Lunch on four days, estimated at \$30 per participant per day. The cumulative cost over 80 participants is estimated at \$9,600. This estimate includes the renting of space dedicated to the conference participants for the duration of the lunch break and the associated service and administrative fees. We should be able to achieve this price point by mixing low-cost options such as sandwich platters on some days with more expensive alternatives such as sit-down lunches on other days.
2. Tea, coffee and light snacks at seven tea/coffee breaks during the conference, estimated at \$7 per person per break. This component totals to \$3920.
3. Cost for one social event, that could be a banquet, a reception or a visit to one of the local (micro-)breweries with a bar and dining facilities, depending on what is feasible and sensible at a price of \$60 a person. This component totals to \$4800.

The total estimated expenses in this category amount to \$18,320.

### **9.1.3 Estimates of Registration Fees**

Covering the above expenses with no external support would require us to set the registration fees for regular registrants at \$490 and for students at \$360.

### **9.1.4 Discussion**

The calculations above represent only an initial thinking, backed by actual enquiries, of how to budget for the conference. We are open to suggestions from the Steering Committee and the members of the FSCD community and will take them into account towards arriving at an actual plan that is in harmony with the desires of the participants. We make a few specific observations below towards framing such a discussion:



1. We have struggled with the fact that, at \$490, the registration fee is at the high end of what we had initially desired. We note that about half this amount—\$229, to be precise—is attributable to the food and the social event attendant at the conference. We have considered the impact of our estimate of registration at the conference being lower than what might actually turn out to be the case. For example, with 100 participants still divided evenly between full and student registrants, we would be able to drop registration fees by about \$40. However, we do not feel confident about betting on this happening and real registration numbers become available too late in the game. Our resolution to this dilemma has been to limit expenditures in these initial calculations to the minimum needed to sustain the conference. If there are a larger number of registrants than we have estimated, this will allow us to deviate from the shoe-string budget, thereby improving the facilities that will be provided.
2. Our calculations have not included any external sources of funding. If these are to materialize, something that we are hopeful of happening, there will be an impact on both the quality of the event and the registration fees. A prime focus for us will be to obtain funds for travel grants to enable student participation; we are investigating NSF support towards this end and will work with European colleagues to similarly probe their national and EU sources. We would also like to reduce student registration fees further through grants and contributions to the conference and we have targeted this aspect in our contacts with the industrial affiliates of UMSEC. Finally, We would like to expand our budget for invited speakers and then to subsidize the costs we have currently budgeted towards this component. Success in some of these initiatives will have the impact of reducing overall registration fees. Our target for these fees is \$450.
3. There are several restaurants on Washington Avenue, the street on which Keller Hall is situated, and in nearby Dinkytown. These restaurants offer lower-cost options for lunch at least because there will be no expenses associated with renting space. In addition, including them in the lunch plans will enable an exploration of the neighbourhood. We have not considered this option in our initial planning for three reasons. First, and perhaps most important, lunch in a space dedicated to the conference participants increases the possibility of interactions and can thereby lead to an intellectually more successful event. Second, since none of the restaurants are large enough to accommodate all the participants at one time, lunch would involve individual planning and possibly some waiting; this can interfere with the conference schedule. Finally, weather can sometimes limit the possibilities, especially if one is not equipped with a good umbrella. This being said, we will still explore this structure depending on the interest expressed by FSCD members. Perhaps an optimal combination might be a mixing of the two styles with suitable accommodations being built into the conference schedule.
4. Our budget includes \$60 for a social event. This would suffice for a conference dinner but one where alcohol would have to be purchased separately by the guests. However, we will consider alternatives to a traditional banquet-style event and we would welcome both reactions to this idea as well as suggestions for such possibilities. We feel that any such event should include the student registrants and our budget calculations

reflect this sentiment. We would ideally like to include an opening reception. This may be possible if our fund-raising efforts are successful. Alternatively, this may be added on as an optional item for which there would be an additional fee.

5. The budget for invited speakers is limited and will accommodate at most 3 such invitations; this number may even have to be limited to just 2, depending on where the invitees will be travelling from. As we have already discussed, one of our initial goals will be to procure external funding to increase this limit. However, regardless of our success in fund-raising, there will always be hard constraints on all budget items and the program committee would have to take these limits into account in its planning.

## **9.2 Workshop Budgeting**

The structure we have chosen for workshops in relation to the conference makes this part of the budget calculations easy: the registration fees will have to cover the food costs for each participant and the incidental costs such as obtaining access to classrooms during the weekend. The registration fee for workshops could be set at about \$35 without a lunch option and around \$65 with lunch included.

# UNIVERSITY OF MINNESOTA

---

*Twin Cities Campus*

*Institute for Mathematics and its Applications  
College of Science and Engineering*

*400 Lind Hall  
207 Church Street SE  
Minneapolis, MN 55455  
Phone: 612-624-6066  
Fax: 612-626-7370  
Email: [staff@ima.umn.edu](mailto:staff@ima.umn.edu)  
Website: [www.ima.umn.edu](http://www.ima.umn.edu)*

March 26, 2019

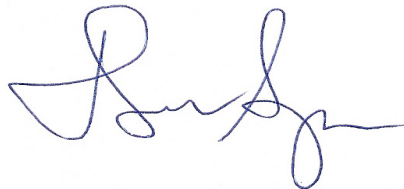
Gopalan Nadathur  
Department of Computer Science  
University of Minnesota  
Minneapolis, MN 55455

Dear Gopalan,

I am happy to hear that you are submitting a proposal to host the Formal Structures for Computation and Deduction conference and its affiliated workshops in Summer 2021 at the University of Minnesota. This conference and its workshops clearly have significant mathematical content. The Institute for Mathematics and its Applications at the University of Minnesota is therefore pleased to offer its whole-hearted support and to participate in the success of the conference.

As part of our commitment, we would be happy to offer the use of Rooms 3-180 and 3-176 in Keller Hall that are under the jurisdiction of IMA for use during the event. Additionally, we will look in the coming months to see if we can offer some form of financial support, possibly through directed funding from our industrial affiliates.

Sincerely yours,



Daniel Spirn  
Director, IMA and Professor, School of Mathematics

March 29, 2019

To: Prof. Gopalan Nadathur  
Department of Computer Science and Engineering  
University of Minnesota, Minneapolis, MN 55455

Dear Gopalan,

I am happy to hear that you are submitting a proposal to host the 2021 edition of the Formal Structures for Computation and Deduction (FSCD) conference and its associated workshops at the University of Minnesota. A core part of the Software Engineering Center's mission is to promote the development of quality software, often using automated tools that are guided by ideas from program analysis and logic-based reasoning. I strongly believe that the FSCD conference and many of its workshops provide exposure to research that develops the foundations for such tools. Holding this event in the Twin Cities will, amongst other things, bring visibility to such ideas in the local community. UMSEC is therefore glad to support your proposal and to commit to making FSCD a successful event should your proposal be approved.

As part of our commitment to the success of FSCD 2021, we have approached our local industrial collaborators at Collins Aerospace and Honeywell, Inc to request their support for the event both through sponsorship and attendance. I will also reach out soon to more of our contacts in the medical device industry and beyond, build interest and support for the event. We have been quite successful in the past in obtaining such support for conferences and events organized by the Center.

Additionally, we offer our services in managing the organizational and financial aspects of the event should it be held at the University of Minnesota. We are also willing to underwrite the financial risks that are associated with an event such as this in return for accruing whatever small profits there might be to the UMSEC budget which will be used to further our mission of education, research and outreach.

I wish you success in your pursuit to bring FSCD to Minnesota and look forward to working with you to make it come to fruition.

Best Regards,



Sanjai Rayadurgam  
Director, University of Minnesota Software Engineering Center  
Department of Computer Science and Engineering  
Email: [rsanjai@umn.edu](mailto:rsanjai@umn.edu)

# Honeywell

## AEROSPACE

12001 Highway 55

Plymouth, MN 55441

www.honeywell.com

June 19, 2019

Prof. Gopalan Nadathur  
Department of Computer Science and Engineering  
University of Minnesota  
200 Union Street SE  
Minneapolis, MN 55455

Dear Gopalan,

I write to follow up on our email communication concerning your endeavor together with UMSEC to host the 2021 Formal Structures in Computation and Deduction conference in the Twin Cities, MN. The work being done in my group at Honeywell includes a significant component of verification, validation and certification related to software and hardware for safety and security critical systems. We are therefore extremely interested in the possibility of having a conference and several workshops related to the foundations of formal methods being held in the area and will be happy in providing assistance in making the event a great success.

Funding cycles being what they are in the industry, it is difficult for us to make concrete financial commitments so far in advance of the said event. At this stage, we will make a firm commitment to encouraging our team personnel to participate in the conference and workshops and to funding their time for participation as relevant. We have also taken cognizance of your request for help in increasing student participation and drawing prominent invited speakers to the event. We will look into how we might be able to provide funds towards these ends and will discuss the matter with you in more detail once your proposal has been approved. As you might understand, it is too early in the process for us to make any commitments of funds towards this end. However, we will discuss possibilities for this, once it is clear that the event will be held in Minneapolis.

Wish you all the best for the organization of this conference.

Sincerely,



Allalaghatta Pavan, PhD, MBA  
Senior Technology Manager - Platform Systems & Flight Safety  
763-954-2423 (Work) 612-508-3716 (Cell)  
allalaghatta.pavan@honeywell.com

---

400 Collins Rd M/S 108-206  
Cedar Rapids, IA 52498  
319-295-9412 (office)  
matthew.wilding@collins.com  
www.collinsaerospace.com



**Collins Aerospace**

A United Technologies Company

Matthew M Wilding, PhD  
Associate Director, Trusted Systems  
Enterprise Engineering

Gopalan Nadathur  
University of Minnesota

June 19, 2019

Dear Gopalan,

I write this letter to express great enthusiasm for the proposal you put together to host the 2021 Formal Structures in Computation and Deduction conference under the aegis of the University of Minnesota Software Engineering Center.

As you know, Collins Aerospace develops formal methods technologies that leverage research from many other academic and industrial research groups. We also apply these rigorous techniques to emerging products in our diverse business units, as many Collins Aerospace products have challenging security-critical and safety-critical requirements. We are delighted by the possibility of bringing a conference and several associated workshops that address the foundations of this research to the Twin Cities where much of our company's work in this important area is accomplished.

We will work with you towards making the event a successful one. We will encourage our researchers to participate in the event and will fund their participation. We would also be open to discussing other ways we might potentially be supportive, such as funding student participation or an invited speaker, once it is clear that the event will be held in Minneapolis.

Good luck!

Sincerely,

A handwritten signature in black ink that reads "Matthew Wilding". The signature is written in a cursive, flowing style.

Dr. Matthew Wilding



## Summer 2019 Rates

### Housing *(Rates are listed per person/night)*

#### Internal (UMN) Groups

	<u>Youth</u>	<u>Adult</u>
Double Room (per person/night)	\$24.50	\$37.20
Single Room (per person/night)	\$29.40	\$49.60

#### External Groups

	<u>Youth</u>	<u>Adult</u>
Double Room – 8 days or more (per person/night)	\$25.90	\$38.20
Double Room – 7 days or fewer (per person/night)	\$26.90	\$38.20
Single Room – 8 days or more (per person/night)	\$30.70	\$50.60
Single Room – 7 days or fewer (per person/night)	\$31.70	\$50.60

#### Apartment/Suite Rates

	<u>Youth/Adult</u>
Shared Bedroom/Shared Bath (per person/night)	\$41.00
Private Bedroom/Shared Bath (per person/night)	\$51.00
Private Bedroom/Private Bath (per person/night)	\$66.00

#### Intern Rates

	<u>Apartment/Suite</u>	<u>Residence Hall</u>
Private Bedroom/Shared Bath (per person/night)	\$42.00	\$33.00

*\*All rates above are in air conditioned buildings, which include 17th Avenue, Centennial, Comstock, Frontier, Middlebrook, Territorial, and Yudof Halls. All rooms include a linen/towel package. Laundry access, computer lab access, and guest WiFi is available at no additional charge.*

### Dining *(Rates listed are pre-tax)*

<b>Internal (UMN) Groups</b>	\$28.00/person – 3 consecutive meals
<b>External Groups</b>	\$30.80/person – 3 consecutive meals
<b>Casual Meal Prices</b>	Breakfast: \$9.20 Lunch \$10.25 Dinner \$11.60
<b>REU Block Meal Plan</b>	\$193.73/week incl. 15 meals + \$28 flex/week

### Parking *(Rates include unlimited access privileges)*

<b>Surface Lots</b>	Cars: \$9.00/day	Busses/Large Vans: \$25.00/day
<b>Ramps</b>	Cars: \$11.00/day	n/a



## Housing Registration Services

Conference & Event Services offers affordable and convenient housing for your camp or conference guests in the University of Minnesota residence halls. Blocks of rooms can be arranged in advance through a reservation and contract with Conference & Event Services.

We also offer **Housing Registration Services**. Registration can be the most labor-intensive aspect of the conference and event planning process. CES offers registration options, which allow guests to make their own housing reservation and/or payment. These services include:

- Development of online registration form
- Guest payment
- Registration confirmation and receipts
- Responding to all registration-related inquiries
- Guest room placement
- Access to client portal which includes participant reporting
- Final reconciliation of conference expenses

The cost for Housing Registration Services is a one-time \$750.00 fee. Any registration services requested within 45 days of the live date are subject to an additional \$75.00 charge.

### **Room Rates for Individual Participant Registration:**

Shared Room, Shared Bathroom	\$46.00
Private Room, Shared Bathroom	\$57.00
Private Room, Private Bathroom	\$73.00