ITP 2015 Conference Booklet

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Chapter 1

Pre-Arrival

1.1 Registration and Conference Fee

In short

(1) you need to make a bank transfer for the conference fee in your local currency, and

(2) you need to email Xingyuan with your details
(xingyuanzhang at 126 dot com)

Xingyuan will then confirm that the payment has been received. Note that if you are Chinese and need a *fa piao* to reclaim the conference fee, you need to contact Xingyuan directly before making any money transfer.

The early conference fee is RMB 3300, which is approximately £350, $533, or €488. It must be transferred via bank transfer and must be made in your local currency; we cannot accept any other form of payment. The tutorials can be registered independently from the conference.

The conference fee includes lunches during the conference. It also covers the excursion, the conference banquet and a welcome reception.

Early conference fee until 31. July:	RMB 3300
Late conference fee from 1. August:	RMB 3800
Additional banquet dinner and excursion:	RMB 530
(one is included in the conference fee)	
Isabelle tutorial (21 – 23 August):	RMB 250
Coq tutorial (27 – 29 August):	RMB 200

The amount payable needs to be transferred to the account:

Account holder's name:	Zhang Xingyuan
Beneficiary bank:	BANK OF CHINA
Swift Code:	BKCHCNBJ940
Account number:	504066588897
Beneficiary bank address:	Nanjing Mei Hua Shan Zhuang Sub-branch, Nanjing, China
Account holder's address:	
	Suite 2106, Building 20, 20 Biao Ying, Qinhuai District, Nanjing, Jiangsu Province, People's Republic of China.

Please make doubly-sure that your bank transferral contains your full name as reference (additional information field), and is in your local currency (e.g. €, $, £)! Otherwise we will have no idea where the money came from, and will not be able to receive the money on our end. Please also make sure that your transferral covers all bank fees.

1.2 Hotel Booking

In short, you need to send your arrival and departure details to Chunhan (chunhanwu at 126 dot com).

While it is possible to book the hotel via official online travel web-pages, the price there is higher. The easiest is to send Chunhan your name, arrival and departure dates and he will send you back a booking ticket from Hanyuan hotel, which you might need for your visa application. You can pay the hotel when you arrive using Visa or MasterCard.

1.3 Visa

Please be aware that for travelling to China you will need a visa, for which you have to apply **beforehand**. It often takes one or two weeks before a visa is granted. Though if you are prepared to pay a higher application fee, then you can shorten the delay to a few days. For the visa you will need an invitation letter, which Chunhan will send you (chunhanwu at 126 dot com). You need to provide him with your name, title, DOB, work address, e-mail and paper title (if you present a paper). He will e-mail you the invitation letter. You might also need your hotel booking (see above) and flight details for the visa application.

Chapter 2

Arrival

Welcome in China. You made it to the airport. Unless your are one of the very few foreigners who can speak and read Chinese, potentially the most challenging part of your journey is about to begin. Below we explain how to get to Hanyuan Hotel in Nanjing from Shanghai Pudong Airport and from Nanjing Lukou Airport. If you arrive from somewhere else and need help, please let us know.

China is generally a safe country for travelling, if the usual precautions are taken. We assume you have never been in China before, therefore let us still start with some general points.

- **Weather**   Unfortunately end of August is the time when it will be especially hot in Nanjing (over 30°C). Be prepared with lots of light clothes, but do not forget a jumper, or sweater, since many places are air-conditioned. It can also rain.

- **Bottled water**   Whereas in many places it is safe to drink water from taps, do not take chances and drink only bottled water! During the conference we will provide bottled water. In other places you have to buy bottles yourself. Remember, Chinese are famous for nibbling on hot tea the whole day, even in sweltering temperatures. There is a reason for this.

- **Traffic**   Do not even think of renting a car in China. Hence, while in China, you probably will be mostly going around on foot. Be careful though: You might come from a region where traffic rules are organised so that pedestrians are mostly treated with respect by all other road users, or even have an "elevated status" because they are considered the "weakest". Traffic in China is, in contrast, organised more, shall we say, according to a Darwinian model: Under no circumstance assume a car (or even a bicycle or the noiseless electric motor bikes) will stop for you. As pedestrian, you have to take care of everybody else. Therefore, whenever possible cross roads at traffic lights and even if the light shows green for you, look out for cars that pay no attention to this fact. Also, zebra crossings do *not*, I repeat, *do not* have any special meaning in China for the road users higher up the traffic ladder (i.e. bicycles and above). Even if it sounds too funny, take our word and head this advice…it might increase your life-expectancy.

- **Free Public Wifi / Mobile Phones**   While free public wifi is nowadays pretty ubiquitous in big cities in China (Starbucks, Costas, McDonalds are obvious places where

to find wifi), you need a working mobile phone in order to use it. You will have to register your number when you log in, and the wifi operator will then send you a password token via SMS. The problem is that chances are great your mobile phone will *not* work in China. Therefore do not assume you can check information on the Internet while travelling.

At the hotel there will be wifi (with the super-secure password: 123456789). But again, do not assume you can download that last episode of the Daily Show: while bandwidth will generally be enough for reading email, be prepared for an uninterrupted stay in China, free from any disturbance coming from online demands.

- **Google etc** There are two Great Walls in China: one prevents you from accessing Google, for example. Use `www.aol.com` or `www.bing.com` instead as your preferred search engine. Also, if you care about such things, set you status on Facebook to "unavailable" for the period of time you will be in China.

- **Map of Hotel** test

2.1 Travel from Nanjing Lukou Airport

2.1.1 Taxi

2.2 Travel from Shanghai Pudong Airport

Many of the participants will arrive at Shanghai Pudong Airport. From there, in short, you have to get to (1) the Hong Qiao railway station and then from there to (2) Nanjing Nan railway station. From Nanjing Nan, you can follow the suggestions in Section 2.1.1. Overall this will take approximately 3h of travelling to the hotel.

From Shanghai Pudong Airport to Hong Qiao Train Station

For the first leg to Hong Qiao train station there are essentially two travel options: one recommended by locals and being the more sensible option is to take the airport bus; the other is by the World's only commercial Maglev train and a change to the metro.

- **Option 1 by Airport bus**:

  At the Pudong Airport follow the signs for Airport Bus, or Airport Ring Bus. You have to take Line 1, which operates between 7:00 and 23:00. The bus stop where you have to wait is

The waiting time is around 30 minutes ??? The ticket costs 30 RMB (€4.25, $5) and can be bought on the bus. This however requires cash. While you wait, be prepared to be harassed by taxi drivers, who insist on driving you to Hong Qiao train station. You can ignore them: it will cost you more, around 100 RMB; the bus is comfortable and air-conditioned, unlike the taxi; and, like the taxi driver, the bus driver already aims for maximum possible speed given good road conditions.

The airport bus takes around 1h and makes only two stops at the very end of the journey. Both stops are in near proximity. You have to take the *second* stop at Hong Qiao Railway Station. You will be able to see the big signs of Hong Qiao Railway Station when you approach the station. Do not take the exit for Hong Qiao International Airport.

- **Option 2 Maglev train / Metro**: Of course travelling on the Maglev is pretty cool… reaching speeds of 415 km/h at certain(!) times of the day, namely 9:02–10:47 and 15:02–16:47. At other time it will travel only at "lame" 300 km/h. Anyway, a ticket will set you back around 50 RMB (€7, $8). The ticket can be paid in cash or credit card. To take this option at the airport, you will need to follow the Maglev signs. The problem with this option, however, is that you can only go until ??? Then you have to change into the overcrowded metro line ??? The change to the metro is a short walk from the Maglev. You have to first buy a ticket at the metro station and then take Line ... The good thing about this option is that metro travelling in Shanghai is pretty easy for foreigners as all stations are signed out in letters. Overall the journey time of this option is also around 1h. So unless you really want to sample the feeling of travelling for 7 minutes at 415 km/h, we recommend Option 1 by bus.

From Hong Qiao Train Station to Nanjing Nan via High-Speed Train

The airport bus will stop directly in front of the southern part of the Hong Qiao train station. As background, train stations above the village level in China are organised more like an airport, than the sleepy train station you might be familiar with. Therefore you first have to go through a security gate where luggage is checked and you padded by a security guard. The security guard might be of either sex and this is seen as normal by Chinese. The entire check is done orderly, but appears to be only a token check and so fortunately is very speedy.

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Next you need to buy a train ticket. There are ticket counters, see left below, signed out in the main hall.

You have to queue on the longer queue and buy a ticket for Nanjing Nan (Nan stands for South station). You will need to show your passport in order to buy a ticket. The ticket will cost around 135 RMB and looks like this:

The G-Number (G42 above) stands for the train number. Then there is the coach number and seat number. The ticket above is for second class (- -). For the short duration of the trip there is no real need to buy a ticket for first class.

Next you have to wait for your train on the main concourse of the station. On the main display the platform of your train will be displayed 30 minutes before departure. Assuming you have some time, rest for a moment and take in the atmosphere of a typical Chinese train station…nothing like what you can experience, for example, at Clapham Junction during rush-hour.[1]

Once you know the platform, go to the gate. Be careful, the gates are nestled between the shops and might be easily overlooked. For each platform there are two gates labelled 'A' and 'B', respectively. 'A' stands for the front of the train and 'B' for the rear – you know which one to go from your ticket.

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[1]Trivia, in case you did not know: Clapham Junction supposedly is the biggest train station in Europe in terms of passengers and rail tracks.

Monday

Monday

9:00 – 10:00

Short Intro Session

M. Moscato, C. Munoz, A. Smith
Affine Arithmetic and Applications to Real-Number Proving

20 mins coffee break

10:20 – 11:10

J. Hölzl, A. Lochbihler, D. Traytel
A Formalized Hierarchy of Probabilistic System Types (Proof Pearl)

F. Immler
A Verified Enclosure for the Lorenz Attractor (Rough Diamond)

20 mins coffee break

11:30 – 12:30

A. Anand, R. Knepper
ROSCoq: Robots Powered by Constructive Reals

H. Chan, M. Norrish
Mechanisation of AKS Algorithm: Part 1 – the Main Theorem

2hs lunch break

14:30 – 15:30

S. Schneider, G. Smolka, S. Hack
A First-Order Functional Intermediate Language for Verified Compilers

A. Fox
Improved Tool Support for Machine-Code Decompilation in HOL4

30 mins coffee break

16:00 – 17:00

F. Besson, S. Blazy, P. Wilke
A Concrete Memory Model for CompCert

T. Tuerk, M. Myreen, R. Kumar
Pattern Matches in HOL: A New Representation and Improved Code Generation

Tuesday

Tuesday

9:00 – 10:00 (chair: M. Norrish)

A. Charguéraud, F. Pottier
Machine-Checked Verification of the Correctness and Amortized Complexity of an Efficient Union-Find Implementation

T. Nipkow
Amortized Complexity Verified

20 mins coffee break

10:20 – 11:10

S. Blazy, D. Demange, D. Pichardie
Validating Dominator Trees for a Fast, Verified Dominance Test

A. Lochbihler, A. Maximova
Stream Fusion for Isabelle's Code Generator (Rough Diamond)

20 mins coffee break

11:30 – 12:30 (chair: X. Zhang)

L. Birkedal
Invited Talk

2hs lunch break

14:30 – 15:30

M. Abdulaziz, M. Norrish, C. Gretton
Verified Over-Approximation of the Diameters of Propositionally Factored Transition Systems

T. Prathamesh
Formalizing Knot Theory in Isabelle/HOL

30 mins coffee break

16:00 – 17:00

S. Schäfer, T. Tebbi, G. Smolka
Autosubst: Reasoning with de Bruijn Terms and Parallel Substitutions

P. Maksimovic, A. Schmitt
HOCore in Coq

short coffee break

17:15 – 18:00

ITP Business Meeting

Wednesday

Time	Session
9:00 – 10:00	R. Spadotti A Mechanized Theory of Regular Trees in Dependent Type Theory
	G. Smolka, S. Schäfer, C. Doczkal Transfinite Constructions in Classical Type Theory
30 mins coffee break	
10:30 – 11:30	M. Norrish **Invited Talk**
1h Lunch break	
12:30 – 21:30	Excursion to Ge Yuan Garden and Slender West Lake Bus departs at 12:30 sharp from the hotel Dinner will be at the Lion Pavilion restaurant which is close to the Slender West Lake We expect to be back at the hotel around 22:30

Thursday

Time	Session
9:00 – 10:00	B. Fallenstein, R. Kumar Proof-Producing Reflection for HOL, with an Application to Model Polymorphism
	O. Kunčar, A. Popescu A Consistent Foundation for Isabelle/HOL
20 mins coffee break	
10:20 – 11:10	Z. Paraskevopoulou et al Foundational Property-Based Testing
	C. Kaliszyk, J. Urban, J. Vyskocil Learning To Parse on Aligned Corpora (Rough Diamond)
20 mins coffee break	
11:30 – 12:30	F. Sieczkowski, A. Bizjak, L. Birkedal ModuRes: A Coq Library for Modular Reasoning about Concurrent Higher-Order Imperative Programming Languages
	S. Boulmé, A. Maréchal Refinement to Certify Abstract Interpretations, Illustrated on Linearization for Polyhedra
2hs lunch break	
14:30 – 15:30	C. Sternagel, R. Thiemann Deriving Comparators and Show-Functions in Isabelle/HOL
	R. Affeldt, J. Garrigue Formalization of Error-correcting Codes: from Hamming to Modern Coding Theory
30 mins coffee break	
16:00 – 17:00	P. Lammich Refinement to Imperative/HOL
	B. Barras, C. Tankink, E. Tassi Asynchronous Processing of Coq Documents: from the Kernel up to the User Interface
short coffee break	
17:15 – 17:45	L. Cruz-Filipe, P. Schneider-Kamp Formalizing Size-Optimal Sorting Networks: Extracting a Certified Proof Checker