

Liyang HU 胡立陽

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## EDUCATION

### UNIVERSITY OF NOTTINGHAM (2006–PRESENT)

- PhD student at Functional Programming Laboratory, School of Computer Science.
- Investigating formalisations of software transactional memory.

### IMPERIAL COLLEGE, LONDON (2004–2005)

- MSc in Advanced Computing: Research Pathway.
- Thesis: *Inferring Effect Annotations for Ownership Types*.

### UNIVERSITY OF CAMBRIDGE (2000–2004)

- Mathematical Tripos: Parts IA, IB and IIA.
- Computer Science Tripos: Part II(G).
- Graduated with First Class Honours BA Cantab.

### METHODIST COLLEGE BELFAST (1993–2000)

- A-Levels in Maths, Further Maths, Chemistry, Physics and Computer Studies.
- Grade 'A' in all five subjects, with full marks in five separate modules.

## EMPLOYMENT

### UNIVERSITY OF NOTTINGHAM NINGBO, CHINA (2007 SPRING)

Created material for, and lectured *Computer Systems Architecture* to undergraduates. Assisted with various other teaching rôles.

### BROADCOM, SCIENCE PARK, CAMBRIDGE (2005 AUTUMN)

Assisted the software team (previously Alphamosaic) as a short-term employee. Designed, developed, hand-optimised and tested portions of an H.264 video encoder for VideoCore, encoding real-time CIF at only 150MHz. Software shipped by the Q4 deadline.

### ALPHAMOSAIC, SCIENCE PARK, CAMBRIDGE (2004 SUMMER)

Worked alongside the two software teams. Revamped various media stream handlers, extended mobile phone display drivers and implemented an audio mixing subsystem for the VideoCore platform. Received bonus for outstanding contributions.

### BT EXACT, ADASTRAL PARK, IPSWICH (2003 SUMMER)

Worked with the Multimedia Streaming Group. Heavily optimised H.264 video codec for the TI OMAP C55x DSP, enabling real-time mobile video playback.

### DESOC TECHNOLOGY INC., CA, US (2001 SUMMER)

Digital Signal Processor programmer. Implemented the G.722.1 audio codec in assembly.

### BLACKSTAR.CO.UK, BELFAST (2000 SUMMER)

Developed a system for and helped the existing team to document and manage their dynamic Perl website. Wrote various Perl XS extensions and learnt basic PostScript.

## AWARDS & ACHIEVEMENTS

- 2001 Second overall team at the British Computer Society Programming Competition.
- 2000 Silver medal at the *All Ireland Schools' Programming Challenge*. Selected for the Irish team at the International Olympiad in Informatics in Beijing, China.
- 2000 Gold Medal Award in the British Physics Challenge. Invited to the Royal Society.
- 1996-9 Four British Mathematics Challenge Gold Certificates; two were 'Best in School'.

## PUBLICATIONS

- Liyang HU and Graham Hutton. *Compiling Concurrency Correctly: Cutting Out the Middle-Man*. Trends in Functional Programming, Komárno, Slovakia, June 2009.
- Liyang HU and Graham Hutton. *Towards a Verified Implementation of Software Transactional Memory*. Trends in Functional Programming, Nijmegen, The Netherlands, May 2008.

## SKILLS & EXPERIENCES

- Seasoned in Haskell, Java, Perl, C, C++ plus various assembly languages.
- Have readily picked up Ruby, Python, SQL &c. when required.
- Well-versed in procedural, object-oriented, as well as functional paradigms.
- Real-world engineering experience of a variety of platforms and supporting tools.
- Understanding of multimedia audio/video compression standards.
- User and administrator of GNU/Linux and OS X systems for over a decade.
- Advanced traditional Unix skills, including shell, sed, make and m4 scripting.
- Teaching assistant for *Computer Systems Architecture* at Nottingham, 2006-9.
- Fluent in everyday Mandarin Chinese. Japanese at approx. JLPT N4-N5 level.
- Full and clean UK driving license since 2002.

## ACTIVITIES & INTERESTS

- Foundations of computing, intuitionistic type theory, and associated mathematics.
- Building software and learning programming languages for fun and profit.
- Digital photography. Electronics hobbyist. Cave exploration.
- Cooking, culinary exploration, and occasionally baking. Amateur barista.

## REFERENCES

*Appropriate references supplied on request.*