

sicsa* The Scottish Informatics &
Computer Science Alliance



**2nd International SICSA Summer School on
Advances in Programming Languages
19th-22th August, 2014
Heriot-Watt University, Edinburgh, Scotland**

Summary Report



Overview

This four-day residential International Summer School on Advances in Programming Languages addressed a number of topics related to programming languages, including programming paradigms, novel languages, type systems and garbage collection. Intended primarily for postgraduate research students, the School offered lectures and practical sessions on an engaging blend of cutting edge theoretical and practical techniques from international experts. It was successor to a Summer School on the same topic, held in 2009 at Heriot-Watt, emphasising the expertise of Scottish universities in this particular area.

The Summer School was supported by the Scottish Informatics and Computer Science Alliance, which fully subsidised students from SICSA member institutions.

Additional sponsorship was provided by Codeplay Software Ltd., an internationally recognized company specialised in advanced optimising technologies, compilers and programmable graphics, located in Edinburgh.

Summer School Course Directors:

Prof. Prof Greg Michaelson, Heriot-Watt University

Dr. Hans-Wolfgang Loidl, Heriot-Watt University

Organising Committee:

Prabhat Totoo, PhD student, Heriot-Watt University

Konstantina Panagiotopoulou, PhD student, Heriot-Watt University

Evgenij Belikov, PhD student, Heriot-Watt University

The Summer School was held at Heriot-Watt University's Riccarton campus and attracted a total of 32 participants from 5 different countries. Notably, several full-time academics from Scottish universities attended the full Summer School, and incited very useful discussions with the speakers and other attendees. This is reflected in the high satisfaction ratings from the feedback. We have integrated suggestions on further reading, coming from these discussions, as links on the main web page, to serve as an information portal to the wider academic community.

Schedule

The workshop was based on two daily sessions on individual topics, including a 60-minute lecture followed by a 90-minute practical:

- **Propositions as Sessions** / Prof. Phil Wadler, University of Edinburgh
- **Dependent Type Systems** / Dr. Conor McBride, University of Strathclyde
- **Partitioned Global Address Space** / Dr. Michele Weiland, Edinburgh Parallel Computing Centre (EPCC)
- **Folding Domain-Specific Languages: Deep and Shallow Embeddings** / Prof. Jeremy Gibbons, University of Oxford
- **Parallel Programming with the Swan Task Dataflow Scheduler** / Dr. Hans Vandierendonck, Queen's University Belfast
- **Regular Expressions as Types** / Prof. Fritz Henglein, DIKU, University of Copenhagen
- **Skeleton-Based Parallel Programming in Eden** / Prof. Rita Loogen, Philipps-Universität Marburg
- **The Powers of Array Programming** / Prof. Sven-Bodo Scholz, Heriot-Watt University

There were two additional 60-minute lectures:

- **Mathematical Garbage: Formal Models of Memory Management** / Dr. Jeremy Singer, University of Glasgow
- **Glasgow parallel Haskell** / Dr. Hans-Wolfgang Loidl, Heriot-Watt University

Full schedule, lecture slides, lab materials and further reading suggestions can be found at the Summer School's webpage:

<http://www.macs.hw.ac.uk/~dsg/events/ISS-AiPL-2014>

Participation

There were 32 participants in total

- 12 were SICSA-supported PhD students:
Glasgow - 5
Heriot-Watt – 7
- 11 participants from SICSA institutions:
Heriot-Watt - 3
Dundee - 1
Edinburgh - 4
St Andrews - 1
Strathclyde - 1
Glasgow – 1
- 2 participants from industry:
Codeplay – 2
- 7 participants from outside Scotland:
Rest of UK - 2
Belgium - 1
Denmark - 1
Germany - 2
Netherlands – 1

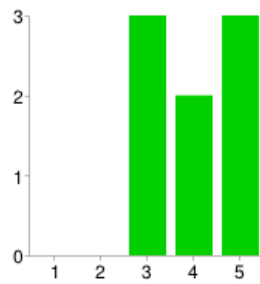
Conclusion

The Summer School ran to budget.

Participant feedback based on a post-Summer School questionnaire was mostly positive as shown below [4 participants – 4 speakers, 8 answers in total].

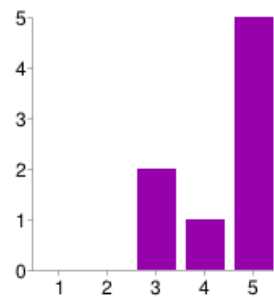
Feedback

Please rate our catering services (lunch, dinner, coffee breaks) on a scale of 1 to 5 (5 being "highly satisfied")



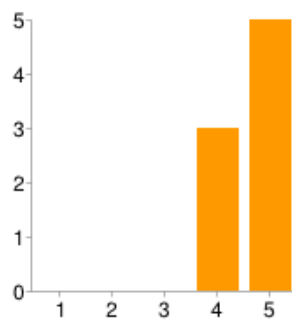
1	0	0%
2	0	0%
3	3	38%
4	2	25%
5	3	38%

Please rate the lecture materials (slides, demos, lab sheets) on a scale of 1 to 5 (5 being "highly satisfied")



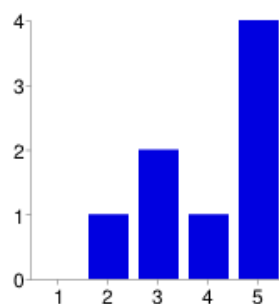
1	0	0%
2	0	0%
3	2	25%
4	1	13%
5	5	63%

Please rate the general organisation (scheduling, on a scale of 1 to 5 (5 being "highly satisfied"))



1	0	0%
2	0	0%
3	0	0%
4	3	38%
5	5	63%

Please rate our lab sessions on a scale of 1 to 5 (5 being "highly satisfied")



1	0	0%
2	1	13%
3	2	25%
4	1	13%
5	4	50%

Overall suggestions included:

- "I didn't see a lot of marketing of and advertising for the summer school."
- "Maybe next time organize a visit to the Edinburgh festival with all students?"
- "Great job. Worthwhile to repeat it!"
- "The food was better than at my university"