Some key papers

Change suggestions to CBJ

June 17, 2022

These references are to publications that have had a significant influence on our research. The first two sections below cover background material mainly on **sequential** programs; the third section moves on to **concurrency**. A longer list of references is available from `LHbk-refs.pdf` . (Some items might point to documents that are behind paywalls.)

Sequential verification

[Tur49]: Alan Turing's **Checking a Large Routine** is a remarkable paper: in just three pages, ...

[Flo67]: Bob Floyd's **Assigning Meanings to Programs** is an essential paper in the development of ideas for the verification of sequential programs. (This widely cited paper is perhaps less widely read! It certainly warrants the effort to study Floyd's contribution which includes termination arguments and initiates what Dijkstra would later formalise as "healthiness conditions".)

[Man68]: Zohar Manna's

[Hoa69]: Tony Hoare's

[Hoa71]: Tony Hoare's **Proof of a program: FIND** offers a key step forward from [Hoa69]: the 1971 paper shows that "Hoare axioms" can be used to check steps of development (as well as providing a way to check complete programs). This transition is discussed in ...

Semantics

[McC66]: John McCarthy's

[LW69]: Peter Lucas and Kurt Walk's

[Hoa69]: Tony Hoare's

[Sto77]: Joe Stoy's

Gordon Plotkin's famous Aarhus lectures on "Structural Operational Semantics" were delivered in 1981 and distributed as a technical report; the reprinting of the notes

[Plo04a]: Gordon Plotkin's

made them far more accessible. See below on the accompanying [Plo04b].

... more? ...

Concurrency

[AM70]: Ed Ashcroft and Zohar Manna's
    [Ash75]: Ed Ashcroft's
    [Owi75]: Susan Owicki's
    [OG76]: Susan Owicki and David Gries's
    ... more? ...

References

[AM70]   E. A. Ashcroft and Z. Manna. *Formalization of Properties of Parallel Programs*. Tech. rep. AIM–110. Published as [**AshcroftManna71**]. Stanford Artificial Intelligence Project, Feb. 1970. URL: https://apps.dtic.mil/sti/citations/AD0708740.

[Ash75]   Edward A Ashcroft. "Proving assertions about parallel programs". In: *Journal of Computer and System Sciences* 10.1 (1975), pp. 110–135.

[Flo67]   R. W. Floyd. "Assigning Meanings to Programs". In: *Mathematical Aspects of Computer Science*. Ed. by J.T. Schwartz. Vol. 19. Proc. of Symposia in Applied Mathematics. American Mathematical Society, 1967, pp. 19–32.

[Hoa69]   C. A. R. Hoare. "An axiomatic basis for computer programming". In: *Communications of the ACM* 12.10 (1969), pp. 576–580.

[Hoa71]   C. A. R. Hoare. "Proof of a Program: FIND". In: *Communications of the ACM* 14.1 (Jan. 1971), pp. 39–45. URL: http://doi.acm.org/10.1145/362452.362489.

[LW69]   Peter Lucas and Kurt Walk. "On the formal description of PL/I". In: *Annual Review in Automatic Programming* 6 (1969), pp. 105–182.

[Man68]   Z. Manna. "Termination of Algorithms". PhD thesis. Carnegie-Mellon University, Apr. 1968. URL: https://apps.dtic.mil/dtic/tr/fulltext/u2/670558.pdf.

[McC66]   John McCarthy. "A formal description of a subset of ALGOL". In: *Formal Language Description Languages for Computer Programming*. North-Holland, 1966, pp. 1–12.

[OG76]   S. S. Owicki and D. Gries. "An axiomatic proof technique for parallel programs I". In: *Acta Informatica* 6 (1976), pp. 319–340.

[Owi75]   S. S. Owicki. "Axiomatic Proof Techniques for Parallel Programs". Published as technical report 75-251. PhD thesis. Department of Computer Science, Cornell University, 1975.

[Plo04a]   Gordon D. Plotkin. "A structural approach to operational semantics". In: *Journal of Logic and Algebraic Programming* 60–61 (2004), pp. 17–139. ISSN: 1567-8326. DOI: doi:10.1016/j.jlap.2004.03.002. URL: http://www.elsevier.com/locate/jlap.

[Plo04b]   Gordon D. Plotkin. "The origins of structural operational semantics". In: *Journal of Logic and Algebraic Programming* 60–61 (2004), pp. 3–15. ISSN: 1567-8326. DOI: doi:10.1016/j.jlap.2004.03.009. URL: http://www.elsevier.com/locate/jlap.

[Sto77]   Joseph E. Stoy. *Denotational Semantics: The Scott-Strachey Approach to Programming Language Theory*. Cambridge, MA, USA: MIT Press, 1977. ISBN: 0262191474.

[Tur49]   A. M. Turing. "Checking a Large Routine". In: *Report of a Conference on High Speed Automatic Calculating Machines*. University Mathematical Laboratory, Cambridge, June 1949, pp. 67–69.