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Bas van den Heuvel

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PhD student in Fundamental Computing
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Personal Information

Last name:	Van den Heuvel	First name:	Bas
Pronouns:	He/Him	Citizenship:	Dutch
Born:	Feb 8, 1993 in Amsterdam (The Netherlands)		

Present Research Interests

Formal verification for message-passing concurrency, in particular using type systems, with attention to practical applicability.

Logical foundations for formal verification.

Unifying formal methods to broaden their applications.

Education

PhD in Fundamental Computing, University of Groningen (since Oct 2019).

Supervisors: Jorge A. Pérez and Gerard Renardel de Lavalette.

Dissertation to be handed in during the summer of 2023.

MSc in Logic, University of Amsterdam (The Netherlands), 2019.

BSc in Computer Science, University of Amsterdam (The Netherlands), 2017.

Selected Peer-reviewed Publications

"Asynchronous Functional Sessions: Cyclic and Concurrent", with Jorge A. Pérez. In: *Proceedings Combined 29th International Workshop on Expressiveness in Concurrency and 19th Workshop on Structural Operational Semantics, Warsaw, Poland, 12th September 2022*. Ed. by Valentina Castiglioni and Claudio A. Mezzina. Vol. 368. Electronic Proceedings in Theoretical Computer Science. Open Publishing Association, 2022, pp. 75–94.

"A Decentralized Analysis of Multiparty Protocols", with Jorge A. Pérez. In: *Science of Computer Programming* (June 2022), p. 102840. ISSN: 0167-6423.

"A Bunch of Sessions: A Propositions-as-Sessions Interpretation of Bunched Implications in Channel-Based Concurrency", with Dan Frumin, Emanuele D'Osualdo, and Jorge A. Pérez. In: *Proceedings of the ACM on Programming Languages* 6.OOPSLA2 (Oct. 2022), 155:841–155:869.

"Deadlock Freedom for Asynchronous and Cyclic Process Networks", with Jorge A. Pérez. In: *Proceedings 14th Interaction and Concurrency Experience, Online, 18th June 2021*. Ed. by Julien Lange et al. Vol. 347. Electronic Proceedings in Theoretical Computer Science. Open Publishing Association, 2021, pp. 38–56.

"Session Type Systems Based on Linear Logic: Classical versus Intuitionistic", with Jorge A. Pérez. In: *Proceedings of the 12th International Workshop on Programming Language Approaches to Concurrency- and Communication-cEntric Software, Dublin, Ireland, 26th April 2020*. Ed. by Stephanie Balzer and Luca Padovani. Vol. 314. Electronic Proceedings in Theoretical Computer Science. Open Publishing Association, 2020, pp. 1–11.

Other Academic Activities

Visiting scholar at the Principles of Programming Group, Computer Science Department, Carnegie Mellon University, Pittsburgh, PA, USA. Host: Stephanie Balzer. Sep–Nov 2022.

Supervisor of a successful BSc thesis, University of Groningen, The Netherlands.

Teaching Assistant in several (under)graduate courses, University of Amsterdam, Vrije Universiteit Amsterdam, and University of Groningen, The Netherlands.

Attended Conferences, Schools, and Talks

Mar 2023	Presentation at Doctoral Symposium, FM'09 (International Symposium on Formal Methods). Title: "Session Types for Correct Communicating Software Systems."
Nov–Dec 2022	Speaker in the Principles of Programming Group's Seminar, Computer Science Department, Carnegie Mellon University, Pittsburgh, PA, USA. Talk titles: "APCP: Deadlock-freedom for Asynchronous and Cyclic Process Networks" and "A Propositions-as-Sessions Interpretation of Bunched Implications".
Sep 2022	Paper presentation at EXPRESS'22 (International Workshop on Expressiveness in Concurrency).
May 2022	Speaker in the Programming Languages / Formal Analysis, Theory & Algorithms Groups' Seminar, School of Computing Science, University of Glasgow, UK. Talk title: "Deadlock-freedom for Asynchronous and Cyclic Process Networks".
Nov 2021	Short talk at NWPT'21 (Nordic Workshop on Programming Theory). Title: "A Decentralized Analysis of Multiparty Protocols".
Oct 2021	Short talk at AGERE'21. Talk title: "Towards Practical Protocol Verification via Minimal Orchestration in ACP".
Jun 2021	Paper presentation at ICE'21 (Interaction and Concurrency Experience).

Languages

Dutch (native), English (fluent), beginner in several other languages (Russian, Polish, Brazilian Portuguese).