# Table of Contents

## The Geneva Convention

Beyond the Geneva Convention on the Treatment of Object Aliasing ........................... 1  
Dave Clarke, James Noble, and Tobias Wrigstad

The Geneva Convention on the Treatment of Object Aliasing ............................ 7  
John Hogg, Doug Lea, Alan Wills, Dennis de Champeaux, and Richard Holt

## Ownership

Ownership Types: A Survey ................................................. 15  
Dave Clarke, Johan Östlund, Ilya Sergey, and Tobias Wrigstad

Notions of Aliasing and Ownership ................................. 59  
Alan Mycroft and Janina Voigt

Understanding Ownership Types with Dependent Types ......................... 84  
Nicholas Cameron, Sophia Drossopoulou, and James Noble

Object Graphs with Ownership Domains: An Empirical Study .................. 109  
Radu Vanciu and Marwan Abi-Antoun

## Concurrency

Alias Control for Deterministic Parallelism .................................... 156  
Robert L. Bocchino Jr.

## Alias Analysis

Alias Analysis for Object-Oriented Programs ....................................... 196  
Manu Sridharan, Satish Chandra, Julian Dolby, Stephen J. Fink, and Eran Yahav

## Controlling Effects

Immutability ................................................................. 233  
Alex Potanin, Johan Östlund, Yoav Zibin, and Michael D. Ernst

Fractional Permissions .................................................... 270  
John Boyland
Verification

Object Ownership in Program Verification .................................................. 289
    Werner Dietl and Peter Müller

State Based Encapsulation for Modular Reasoning about Behavior-Preserving Refactorings ........................................ 319
    Anindya Banerjee and David A. Naumann

Separation Logic for Object-Oriented Programming .................................. 366
    Matthew Parkinson and Gavin Bierman

VeriFast for Java: A Tutorial ................................................................. 407
    Jan Smans, Bart Jacobs, and Frank Piessens

Programming Languages

Confined Roles and Decapsulation in Object Teams — Contradiction or Synergy? ......................................................... 443
    Stephan Herrmann

Location Types for Safe Programming with Near and Far References ... 471
    Yannick Welsch, Jan Schäfer, and Arnd Poetzsch-Heffter

Visions

The Future of Aliasing in Parallel Programming ....................................... 501
    Robert L. Bocchino Jr.

Aliasing Visions: Ownership and Location ............................................... 503
    Alan Mycroft

Alias Analysis: Beyond the Code .............................................................. 505
    Manu Sridharan

How, Then, Should We Program? ............................................................... 507
    James Noble

A Retrospective on Aliasing Type Systems: 2012-2022 ............................. 509
    Jonathan Aldrich

Structured Aliasing ..................................................................................... 512
    Tobias Wrigstad

Author Index ................................................................................................ 515