

Xuan Bi

PHD CANDIDATE · PROGRAMMING LANGUAGES

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Education

The University of Hong Kong

PHD IN COMPUTER SCIENCE

- Research Fields: Programming Language Design, Functional Programming, Gradual Typing, Formal Verification
- Advisor: Dr. Bruno C. d. S. Oliveira

Hong Kong, China

Sep. 2014 - Expected Aug. 2018

Zhejiang University

B.S. IN COMPUTER SCIENCE AND ENGINEERING

- Thesis Advisor: Prof. Huajun Chen
- Enlisted in He Zhijun Honor Class (20 / 160)
- Cum. GPA: 3.9 / 4.0

Zhejiang, China

Sep. 2010 - Aug. 2014

Simon Fraser University

EXCHANGE FOR TWO SEMESTERS

- Cum. GPA: 3.9 / 4.0

Vancouver, Canada

Sep. 2012 - Apr. 2013

Drafts

Consistent Subtyping for All

NINGNING XIE, **XUAN BI**, BRUNO C. D. S. OLIVEIRA, TOM SCHRIJVERS

- This is the extended journal version of our ESOP 2018 paper.

Draft paper

Invited submission to TOPLAS

Publications

Typed First-Class Traits

XUAN BI, BRUNO C. D. S. OLIVEIRA

- Proposed a type system for first-class traits

Amsterdam, Netherlands

Accepted at ECOOP 2018

The Essence of Nested Composition

XUAN BI, BRUNO C. D. S. OLIVEIRA, TOM SCHRIJVERS

- Proposed a type-safe and coherent calculus with support for nested composition and subtyping

Amsterdam, Netherlands

Accepted at ECOOP 2018

Consistent Subtyping for All

NINGNING XIE, **XUAN BI**, BRUNO C. D. S. OLIVEIRA

- Proposed a general mechanism of integrating gradual typing with implicit higher-rank polymorphism

Thessaloniki, Greece

In ESOP 2018

Unified Syntax with Iso-Types

YANPENG YANG, **XUAN BI**, BRUNO C. D. S. OLIVEIRA

- Proposed a dependently typed calculus with unified syntax and decidable type-checking

Hanoi, Vietnam

In APLAS 2016

Memory-Efficient Tail Calls in the JVM with Imperative Functional Objects

TOMAS TAUBER, **XUAN BI**, ZHIYUAN SHI, WEIXIN ZHANG, HUANG LI, ZHENRUI ZHANG, BRUNO C. D. S. OLIVEIRA

- Proposed a new JVM compilation technique for functional programs

Pohang, South Korea

In APLAS 2015

BioTCM-SE: A Semantic Search Engine for the Information Retrieval of Modern Biology and Traditional Chinese Medicine

XI CHEN, HUAJUN CHEN, **XUAN BI**, PEIQIN GU, JIAOYAN CHEN, ZHAOHUI WU

- Designed the data processing engine in Scala

Comp. Math. Methods in Medicine 2014

Programming Skills

Working Knowledge Haskell • Coq • Agda • Idris • Java

Basic Knowledge Scala • OCaml • Racket • C • C++ • JavaScript • Python

Example Projects

Haskell	SEDEL - Type system for first-class traits
Coq	NeColus - A simply typed calculus that supports nested composition
Haskell + Java	Fcore - Research middleware compiler from System F-based languages to Java
Agda	Category theory formalized in Agda

Professional Activities

- 2017 **Subreviewer**, ESOP 2017
- 2016 **Subreviewer**, SBLP 2016

Teaching

COMP 3258: Functional Programming

HKU

TEACHING ASSISTANT

Fall 2017 • Spring 2017

- Gave oral tutorials every week and designed assignments

COMP 3259: Principles of Programming Languages

HKU

TEACHING ASSISTANT

Fall 2016 • Spring 2015 • Fall 2014

- Gave oral tutorials every week and designed assignments

Extracurricular Experience

European Conference on Object Oriented Programming

Amsterdam, Netherlands

STUDENT VOLUNTEER

2018

Morgan Stanley

HKU

LEAD STUDENT HELPER

2017

- In charge of coordinating student tasks for the talk by Dr. Bjarne Stroustrup, Father of C++

DeepSpec Summer School

UPenn, USA

FUNDED PARTICIPANT

2017

- This is the first DeepSpec Summer School on Verified Systems

Programming Languages Mentoring Workshop at ICFP

Nara, Japan

FUNDED PARTICIPANT

2016

Hong Kong Functional Programming Meetup

Hong Kong

INVITED SPEAKER

- Talk titled "Programming with dependent types in Idris"
- Talk titled "New Buzz in Haskell Reloaded"