Xuan **Bi**

PhD Candidate · Programming Languages

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Education

The University of Hong Kong   *Hong Kong, China*
PhD in Computer Science   *Sep. 2014 - Expected Aug. 2018*
- Research Fields: Programming Language Design, Functional Programming, Gradual Typing, Formal Verification
- Advisor: Dr. Bruno C. d. S. Oliveira

Zhejiang University   *Zhejiang, China*
B.S. in Computer Science and Engineering   *Sep. 2010 - Aug. 2014*
- Thesis Advisor: Prof. Huajun Chen
- Enlisted in He Zhijun Honor Class (20 / 160)
- Cum. GPA: 3.9 / 4.0

Simon Fraser University   *Vancouver, Canada*
Exchange for two semesters   *Sep. 2012 - Apr. 2013*
- Cum. GPA: 3.9 / 4.0

Publications

Typed First-Class Traits   *Amsterdam, Netherlands*
Xuan Bi, Bruno C. d. S. Oliveira   *Accepted at ECOOP 2018*
- Proposed a type system for first-class traits

The Essence of Nested Composition   *Amsterdam, Netherlands*
Xuan Bi, Bruno C. d. S. Oliveira, Tom Schrijvers   *Accepted at ECOOP 2018*
- Proposed a type-safe and coherent calculus with support for nested composition and subtyping

Consistent Subtyping for All   *Thessaloniki, Greece*
Ningning Xie, Xuan Bi, Bruno C. d. S. Oliveira   *In ESOP 2018*
- Proposed a general mechanism of integrating gradual typing with implicit higher-rank polymorphism

Unified Syntax with Iso-Types   *Hanoi, Vietnam*
Yanpeng Yang, Xuan Bi, Bruno C. d. S. Oliveira   *In APLAS 2016*
- Proposed a dependently typed calculus with unified syntax and decidable type-checking

Memory-Efficient Tail Calls in the JVM with Imperative Functional Objects   *Pohang, South Korea*
Tomas Tauber, Xuan Bi, Zhiyuan Shi, Weixin Zhang, Huang Li, Zhenrui Zhang, Bruno C. d. S. Oliveira   *In APLAS 2015*
- Proposed a new JVM compilation technique for functional programs

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   *Comp. Math. Methods in Medicine 2014*
- Designed the data processing engine in Scala

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"