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 interests: Programming Languages, Type Systems, Type Theory
- 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
Basic Knowledge   Scala • OCaml • Racket • C • C++ • Java • 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

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*
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"