Andrew M. **Kent**

RESEARCHER · SOFTWARE ENGINEER · PROGRAMMING LANGUAGE SPECIALIST

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Education

Indiana University   *Bloomington, Indiana*

PH.D. IN COMPUTER SCIENCE   *May 2014 - PRESENT*

- Dissertation topic: Advanced Types for Occurrence Typing Systems.
- Anticipated dissertation defense summer 2019.
- Advised by Sam Tobin-Hochstadt.

Indiana University   *Bloomington, Indiana*

M.S. IN COMPUTER SCIENCE   *May 2014 - May. 2017*

Brigham Young University   *Provo, Utah*

B.S. IN COMPUTER SCIENCE   *Aug. 2010 - Aug. 2013*

- Graduated magna cum laude.

Technical Skills

Programming	Scheme/Racket, Haskell, C/C++, Java, Python, git, basic unix tools and environment, LaTeX, etc
Verification	Coq, Agda

Experience

Indiana University   *Bloomington, Indiana*

GRADUATE RESEARCH ASSISTANT   *May 2014 - PRESENT*

- Developed novel technique for adding refinement types to a type system for untyped languages (i.e. Typed Racket) which is included in releases of the Racket programming language since v6.11.
- Modeled and mechanically verified a novel technique for combining semantic subtyping with a type system for untyped languages.
- Advised by Sam Tobin-Hochstadt.

INSTRUCTOR (CSCI-B 490/629 DEPENDENT TYPES)   *Spring 2018*

- Designed and taught introductory dependent types course based on Friedman and Christiansen's book "The Little Typer".

Microsoft Research Ltd.   *Cambridge, UK*

RESEARCH INTERN   *May 2017 - Jul. 2017*

- Developed and prototyped unique solutions to trusted computing problems in the cloud leveraging TPM and SGX/Enclave technologies.
- Advised by Sylvan Clebsch.

Brigham Young University   *Provo, Utah*

GRADUATE RESEARCH ASSISTANT   *Aug. 2013 - Apr. 2014*

- Investigated the formalization of security protocol analysis techniques (Strand Spaces) utilizing the Coq proof assistant.
- Advised by Dr. Jay McCarthy.

Microsoft Corporation   *Redmond, Washington*

SOFTWARE DEVELOPMENT ENGINEER INTERN   *May 2012 - Aug. 2012*

- Explored optimizations and improvements for Microsoft OneNote during a summer internship (resulted in full-time offer).

Brigham Young University   *Provo, Utah*

UNDERGRADUATE RESEARCH ASSISTANT   *May 2011 - Sep. 2011*

- Developed method for automatically generating historical social networks from source documents to aid historical research.
- Advised by Dr. William Berret and Dr. Tom Sederberg.

United States Marine Corps   *Camp Pendleton, California*

SIGNALS INTELLIGENCE ANALYST   *Nov. 2005 - Aug. 2010*

- Provided SIGINT analysis and reporting in support of military operations in western Iraq during deployments in 2008 and 2009.
- Led and trained team of five SIGINT analysts during 2009 Iraq deployment.
- Received honorable discharge at the rank of Sergeant.

Publications

Migratory Typing: Ten Years Later

SNAPL

S. Tobin-Hochstadt, M. Felleisen, R. B. Findler, M. Flatt, B. Greenman, **A. M. Kent**, V. St-Amour, , T. S. Strickland,

2017

A. Takikawa. *Proc. 2nd Summit on Advances in Programming Languages.*

Occurrence Typing Modulo Theories

PLDI

A. M. Kent, D. Kempe, S. Tobin-Hochstadt. *Proc. 37th ACM Conf. on Programming Language Design and*

2016

Implementation.

- Included successfully evaluated artifact.

Design and Evaluation of Gradual Typing for Python

DLS

M.M. Vitousek, **A. M. Kent**, J.G. Siek, J. Baker. *Proc. 10th ACM Symposium on Dynamic Languages.*

2014

Linking the Past: Discovering Historical Social Networks from Documents and Linking to a Genealogical Database

HIP

D.J. Kennard, **A. M. Kent**, W.A. Barret. *Proc. 1st Workshop on Historical Document Imaging and Processing.*

2011

Open Source and Community Involvement

Typed Racket

github.com/racket/typed-racket

Core Contributor

Dec. 2014 - PRESENT

- Performed significant refactorings to improve performance and code maintainability.
- Added refinement types (v6.11) and other features/enhancements to the type system.
- Increased coverage of manual and random test suites.
- Helped adopt (Rust-inspired) RFC process to better coordinate contributions to the type system.

Racket

github.com/racket/racket

Contributor

Oct. 2016 - PRESENT

- Contributed occasional bug fixes, features, and improvements to the core Racket language.

Interfaith Winter Shelter Volunteer

Bloomington, Indiana

Volunteer

Jan. 2016 - PRESENT

- Semi-regular night-shift volunteer at shelter for the homeless during winter months.

Honors, Awards, Etc

2017	**People's Choice Runner-up**, MSR Cambridge Hackathon	*Cambridge, UK*
2013	**Fellowship**, NASA Space Grant Consortium	*Provo, Utah*
2007	**1st in class**, Intermediate Comm. Signals Analysis Course, Naval Center for Information Warfare Training	*Pensacola, Florida*
2006	**TS/SCI Clearance**, expired approximately 2011	
2002	**Eagle Scout**, Boy Scouts of America	*Camas, Washington*