

Joonwon Choi

Formal Verification Engineer at Apple
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Current Position

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| Formal Verification Engineer, Apple | Mar 2021 – Current |
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Education

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| Massachusetts Institute of Technology Doctor of Philosophy in Electrical Engineering and Computer Science - Graduate Cumulative GPA: 5.0 (on a 5.0 scale) | Sep 2016 – Feb 2021 |
| Massachusetts Institute of Technology Master of Science in Electrical Engineering and Computer Science - Graduate Cumulative GPA: 5.0 (on a 5.0 scale) | Sep 2014 – Jun 2016 |
| Seoul National University Bachelor of Science in Computer Science and Engineering Double major in Mathematical Sciences graduated with honors (summa cum laude) | Mar 2006 – Feb 2013 |

Publications

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- [1] Kami: A Platform for High-Level Parametric Hardware Specification and its Modular Verification.
Joonwon Choi, Muralidaran Vijayaraghavan, Benjamin Sherman, Adam Chlipala, Arvind.
Proceedings of the ACM SIGPLAN International Conference on Functional Programming (ICFP'17).
September 2017. [paper](#)
 - [2] Structural Design and Proof of Hierarchical Cache-Coherence Protocols.
Joonwon Choi
Ph.D. Thesis in Electrical Engineering and Computer Science. Massachusetts Institute of Technology.
Thesis Supervisor: Adam Chlipala and Arvind [thesis](#)
 - [3] An Inlining Approach to Formal Hardware Semantics.
Joonwon Choi
M.S. Thesis in Electrical Engineering and Computer Science. Massachusetts Institute of Technology.
Thesis Supervisor: Arvind [thesis](#)
 - [4] Integration Verification Across Software and Hardware for a Simple Embedded System.
Andres Erbsen, Samuel Gruetter, **Joonwon Choi**, Clark Wood, Adam Chlipala.
Proceedings of the ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI'21).
June 2021 (to appear).
 - [5] EverCrypt: A Fast, Verified, Cross-Platform Cryptographic Provider.
Jonathan Protzenko, Bryan Parno, Aymeric Fromherz, Chris Hawblitzel, Marina Polubelova, Karthikeyan Bhargavan,
Benjamin Beurdouche, **Joonwon Choi**, Antoine Delignat-Lavaud, Cédric Fournet, Natalia Kulatova, Tahina Ramananan-
dro, Aseem Rastogi, Nikhil Swamy, Christoph M. Wintersteiger, and Santiago Zanella-Beguelin.
IEEE Symposium on Security and Privacy (SP'20). May 2020. [paper](#)
 - [6] Crellvm: Verified Credible Compilation for LLVM.
Jecheon Kang, Yoonseung Kim, Youngju Song, Juneyoung Lee, Sanghoon Park, Mark Dongyeon Shin, Yonghyun Kim,

Sungkeun Cho, **Joonwon Choi**, Chung-Kil Hur, and Kwangkeun Yi.
Proceedings of the ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI'18).
June 2018. paper

Drafts (under submission)

[1] Hemiola: A Framework for Structural Design and Proof of Cache-Coherence Protocols.
Joonwon Choi and Adam Chlipala.

Honors & Awards

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| Kwanjeong Educational Fellowship | Sep 2014 – May 2019 |
| MIT Emerson Scholarship for Private Music Study | Sep 2014 – May 2018 |
| Top Honor (summa cum laude) Certification Seoul National University | Feb 2013 |
| Presidential Science Scholarship | Mar 2006 – Feb 2013 |

Teaching Experience

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| MIT 6.887: Formal Reasoning About Programs Teaching Assistant | Spring 2017 |
| SNU 4190.310: Programming Languages Teaching Assistant | Fall 2013 |

Working Experience

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| Apple, United States Formal Verification Engineer | Mar 2021 – Current |
| Microsoft Research Cambridge, United Kingdom Research Intern | Jul 2018 – Sep 2018 |
| ROSAEC, Korea Research Associate | Mar 2013 – Jul 2014 |
| allm Games, Korea Software Engineer (Skilled Industry Personnel as alternative military service) | Apr 2009 – Oct 2011 |
| Google, Korea Software Engineering Intern (SWE Intern) | Jan 2009 – Apr 2009 |
| SK Communications, Korea Intern (Software Developer) | Jul 2007 – Aug 2007 |

Last updated: March 28, 2021
<http://joonwon.net/c/docs/cv.pdf>