Joomy Korkut[1]

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Research Interests

Dependent types, formal verification, proof automation, metaprogramming, compilers, type systems.

Education

- **Princeton University**, Princeton, NJ.
    - **Ph.D.**, *Computer Science.* September 2018 - ongoing

- **Wesleyan University**, Middletown, CT.
    - **M.A.**, *Computer Science.* September 2017 - May 2018
    - **B.A.**, *Computer Science* (with honors) and *Mathematics.* September 2013 - May 2017

Work and Research Experience

- **Applied Scientist Intern**, Amazon Web Services, New York, NY. (May - August 2022)
  Worked on lightweight verification of communication protocols in distributed systems, for a randomized testing tool in Rust.
- **Preceptor**, Princeton University (September 2019 - December 2022)
  Graded assignments, led precepts, held office hours for the following courses:
    - COS 326 - Functional Programming. (Fall 2019, Fall 2020 as head preceptor, Fall 2022)

- **Software Engineering Intern**, Awake Security, Sunnyvale, CA. (July - September 2018)
  Contributed to the design of a functional programming language with row polymorphism for network queries and its implementation in Haskell.
- **Student Leader**, Wesleyan University (Fall 2015, Spring 2018)
  Designed and taught a course on Haskell for credit, under the supervision of Prof. James Lipton.
- **Research in the Sciences Fellow**, Wesleyan University (May - August 2015, May - August 2016)
  Formalized the correctness and termination proofs of a regular expression matching algorithm using continuation passing style, in Agda. Formalized the compilation of the modal logic based functional language, in Agda. Under the supervision of Prof. Daniel R. Licata.
- **Course Assistant**, Wesleyan University (September 2014 - May 2018)
  Graded assignments, led tutor sessions, and occasionally gave lectures for the following courses:
    - COMP 115 - How to Design Programs. (Fall 2017, Spring 2018)
    - COMP 212 - Computer Science II. (Fall 2014, Spring 2015)
    - COMP 321 - Design of Programming Languages. (Fall 2015, Fall 2016, Fall 2017 (1 lecture))
    - COMP 360-01 - Computer-Checked Programs and Proofs (Spring 2016)
    - COMP 360-02 - Automated Theorem Proving (Spring 2016 (4 lectures))

- **Programming Specialist**, Instructional Media Services, Wesleyan University (September 2013 - May 2015)
  Developed an advanced special events calendar by myself, which is still in use.

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[1]Legal name: Cumhur Korkut

Skills

- Functional programming (Haskell, Standard ML, OCaml, Agda, Idris, Coq etc.)
- Web development (JavaScript, HTML, CSS etc.)
- Proof assistants (Coq, Agda, Idris etc.)
- Other: scripting languages (Python etc.), Prolog, LaTeX.
  Comfortable with Unix env., NoSQL databases and Git

Languages

- English (fluent)
- Turkish (native)

Attended

- *New Jersey Programming Languages and Systems Seminar*, Hoboken, NJ. (May 2022)
- *Principles of Programming Languages*, Philadelphia, PA. (January 2022)
  as a student volunteer
- *International Conference on Functional Programming*, Berlin, Germany. (August 2019)
  as a student volunteer
- *Metaprogramming Summer School*, Dagstuhl, Germany. (August 2019)
- *SPLASH*, Boston, MA. (November 2018)
  as a student volunteer
- *International Conference on Functional Programming*, St. Louis, MO. (September 2018)
- *DeepSpec Summer School*, Princeton, NJ. (July 2018)
- *Principles of Programming Languages*, Los Angeles, CA. (January 2018)
  with Programming Languages Mentoring Workshop scholarship
- *International Conference on Functional Programming*, Oxford, England. (September 2017)
- *DeepSpec Summer School*, Philadelphia, PA. (July 2017)
- *Oregon Programming Languages Summer School*, Eugene, OR. (June 2017)
- *New England Programming Languages and Systems Symposium*, Middletown, CT. (June 2015)

Talks[2]

- *A Proof Tree Builder for Sequent Calculus and Hoare Logic*, International Workshop on Theorem Proving Components for Educational Software. Haifa, Israel. (remote) (August 11th, 2022)
- *Direct Reflection for Free!*, International Conference on Functional Programming (Student Research Competition, Graduate Category, 3rd place), Berlin, Germany (August 20th, 2019)
- *Commanding Emacs from Coq*, Scheme Workshop, Berlin, Germany (August 18th, 2019)
- *Direct Reflection for Free!*, New York Seminar of Programming Languages and Software Engineering, CUNY Hunter College (February 25th, 2019)
- *Intro to Interactive Theorem Proving*, Graduate Student Series, Wesleyan University. (October 5th, 2017)

Last updated on August 23, 2022

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[2] Excluding talks given for published research papers.