

Alexander Bagnall

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EDUCATION

Ohio University, Athens, Ohio, USA

- Bachelor of Science (B.S.) in Computer Science Aug 2012 – Apr 2016

RELEVANT EXPERIENCE

Ohio University

- Research Assistant Jun 2016 – Present
 - Advisor: Dr. Gordon Stewart
- Teaching Assistant - Formal Languages and Compilers Jan 2017 – Apr 2017

Galois, Inc.

- Intern. May 2018 – Aug 2018
 - Mentor: Eddy Westbrook

AWARDS & SCHOLARSHIPS

- Outstanding Senior in Computer Science, Ohio University May 2016

PUBLICATIONS

- Coinductive Trees for Exact Inference of Probabilistic Programs. Alexander Bagnall, Gordon Stewart, and Anindya Banerjee. LAFI'20: Languages for Inference.
- Certifying the True Error: Machine Learning in Coq with Verified Generalization Guarantees. Alexander Bagnall and Gordon Stewart. AAAI-19: Thirty-Third AAAI Conference on Artificial Intelligence.
- Verified Learning Without Regret: From Algorithmic Game Theory to Distributed Systems With Mechanized Complexity Guarantees. Samuel Merten, Alexander Bagnall, and Gordon Stewart. ESOP'18: The 27th European Symposium on Programming.
- A Library for Algorithmic Game Theory in Ssreflect/Coq. Alexander Bagnall, Samuel Merten, and Gordon Stewart. Journal of Formalized Reasoning. December 2017.

SKILLS

- Functional programming (Haskell, OCaml, Lisp)
- Interactive theorem proving in Coq
- OOP (Java, C#, C++, Python)

INTERESTS

Programming languages, compilers, probabilistic programming

EXAMPLE WORK

- Zar
Experimental probabilistic programming language supporting exact inference.
- Training Ensembles to Detect Adversarial Examples
A paper (unpublished) with accompanying Python/TensorFlow source code.
- Cage
Coq library for verified game-based distributed systems.
- MLCert
Coq framework for verified machine learning.
- hakan
Functional programming language with algebraic datatypes and typeclasses.

REFERENCES

- **Gordon Stewart**
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- **Eddy Westbrook**
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