

MATTHEW J. KUKLA

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EDUCATION

University of Maryland

Mathematics, BSc.

awarded May 2022

College Park, Maryland, USA

- Selected for First-Year Innovation and Research Experience (FIRE)

PROFESSIONAL EXPERIENCE

BlueHalo Labs

Research Engineer

June 2022 - present

Rockville, Maryland, USA

- Researcher in applied mathematics, graph theory, formal logic.
 - Focused on applications to automated reasoning, scientific computing, lexical semantics
 - Designed, implemented, and deployed novel graph clustering algorithms
- Write technical reports for delivery to private sector and government customers

The Math Citadel

Researcher

March 2019 - present

- Conduct research in fuzzy algebra, measure theory
- Develop software packages
- Contribute to technical articles, professional lectures, and notes

Patton Electronics

Software Engineering Intern

Summer 2016

Gaithersburg, Maryland, USA

- Developed a Linux-based operating system for VDSL routers
 - Wrote, patched hardware-specific kernel modules

SKILLS

Programming Languages

C, OCaml, Python, Fortran, Julia, Prolog, Java, MATLAB

Operating Systems

Linux, UNIX (BSD and Solaris), MS-DOS

Tools, Libraries

Shell scripting, sed/AWK, Git, \LaTeX , SciPy, GraphBLAS

Web

HTML/CSS, Gopher, OpenSearch, AWS

PAPERS AND PREPRINTS

Logical Limit Laws for Layered Permutations and Related Structures

Authors: Samuel Braunfeld, Matthew Kukla (2021)

Published, Enumerative Combinatorics and Applications. 2 no. 4.

Colored Convex Linear Orders and Logical Limit Laws

Authors: Matthew Kukla (2021)

Preprint.

Rings of Typed Ordered Fuzzy Numbers

Authors: Matthew Kukla, Rachel Traylor (2020)

Preprint, arXiv:2010.07764.

SELECTED TALKS

Double Categorical Limits

The Adjoint School (2024)

Logical Limit Laws for Layered Permutations and Related Structures

University of Maryland Logic Seminar (2022)

Categorical Mirror Symmetry of Elliptic Curves (two lecture series)

University of Maryland Geometry and Physics Seminar (2018)

Generalized Calabi-Yau Manifolds

University of Maryland Geometry and Physics Seminar (2018)

CONFERENCES

6th International Conference on Applied Category Theory

University of Maryland (August 2023)

University of Maryland Geometry Festival

University of Maryland (May 2019)

Witt Vectors, Deformations, and Absolute Geometry

University of Vermont (June 2018)