MATTHEW J. KUKLA

mkukla1@umd.edu ⋄ https://mkukla.net

EDUCATION

University of Maryland   awarded May 2022
Mathematics, BSc.   *College Park, Maryland, USA*

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

PROFESSIONAL EXPERIENCE

BlueHalo Labs   June 2022 - present
Research Engineer   *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   March 2019 - present
Researcher

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

Patton Electronics   Summer 2016
Software Engineering Intern   *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

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)