

KRISHNA SIVAKUMAR

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CS Masters Graduate with Research Interests in On-Disk Databases, Programming Languages and Systems Software.
Looking for Internships or Full-Time Positions.

EXPERIENCE

Research Assistant, ODIn (One Data Interactions) Lab, University at Buffalo

August 2025 - Present

Currently collaborating with Dr. Oliver Kennedy and the team on building Draupnir, a Datalog engine for large scale program analyses on commodity hardware. Working on pipeline optimizations and the persistent storage engine.

Publications:

1. Flow-centric Query Evaluation Pipelines (Presented in North Eastern Database Day, 2026
Victoria Dib, Andrew J. Mikalsen, Krishna Sivakumar, Jaroslaw Zola, Oliver Kennedy ([paper](#), [poster](#)))

Software Developer / Research Aide, Research Foundation at State University of New York, Buffalo, NY

January 2024 - December 2025

Collaborated with researchers at the UB School of Architecture in an agile, iterative process to define requirements, develop features, and deliver a platform for structural optimization projects.

- Implemented a [Genetic-Algorithm-Based optimizer plugin](#) for the Grasshopper Subsystem of Rhino3D (C#) and integrated it with the web platform through data ingestion.
- Built a containerized Go REST API that supported a SvelteKit frontend to visualize 20GiB of research data and ingest large compressed archives (1-10GiB) with minimal compute and memory, provisioned with Caddy (Reverse Proxy) and Docker Compose. (Links to [Go Backend](#) & [SvelteKit Frontend](#))

TECHNICAL SKILLS

Programming Languages: Rust, Go, C, Python, Javascript, Shell

Tools: Git, CMake, Vim, Neovim, VS Code, Jupyter, Docker, GNU

Platforms: AWS (EC2, S3, Lambda), Digital Ocean

Web Frameworks: Django, SvelteKit, React

FEATURED SOFTWARE

Draupnir: Datalog engine for large-scale program analysis on commodity hardware ([Link](#))

Morpho Design Explorer: Genetic-Algorithm-Search for Architectural Applications on Rhino3D ([Link](#))

Vecclock: SQLite extension adding vector clock to SQLite, enabling local-first software ([Link](#))

EDUCATION

Master of Science (Honors), Computer Science and Engineering, August 2023 - December 2025

University at Buffalo, The State University of New York, GPA 3.3

Relevant Coursework: Distributed Systems (A), Operating Systems (A), Networking Concepts (A), Languages and Databases (A)

Bachelor of Technology, Computer Science and Engineering, August 2023

Vellore Institute of Technology, Chennai