2023. Fadi Shawki

A self-profile by some 23-solar-orbiting explorer.

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1 October 2023

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Currently...

Looking for a (Compiler, Chip, Language, ...)-(Research, Design)-related position
Feel free to contact me on the socials specified above.

Building a (ray-like hypergraph) graphical interface

github.com/orbitmines/explorer

Modelling WebAssembly

github.com/orbitmines/wasm

Trying to compress enwik9 (Hutter Prize)

github.com/orbitmines/enwik9

Writing a paper on most of the above

orbitmines.com/papers/on-orbits

Writings

Theoretics

[2022. On the Intelligibility of (dynamic) Systems and Conceptual Uncertainty](#)

Formal History

Projects

"Explorer" OrbitMines Research (July, 2022 - Present)
"Software Developer" BreachLock Inc. (November, 2021 - May, 2022)
"Contractor" MartiOrbak Software (November, 2020 - March 2021)
"Backend Developer" Mobiel.nl (November, 2018 - August, 2019)
"Founder" OrbitMines (Minecraft) (October, 2013 - May, 2019)

Formal Education

"(Unfinished) Computer Science (BSc)" Leiden University (September, 2019 - December, 2020)

"VWO / Science & Engineering" (2012 - 2019)

Attended Events

"SEMF School of 2023" (2023)

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Technology Exposure

2013 .. 2023

WebAssembly WebGPU Rust C++ LLVM Chyp Python Go Haskell Wolfram Language Java Kotlin Ruby (on Rails) C# .NET Blazor

JavaScript CSS SASS HTML Webpack AssemblyScript TypeScript React Blueprint.js Slate Three.js drei IPFS IPVM SQL MySQL

PostgreSQL MongoDB Redis RabbitMQ Git GitLab GitHub Bitbucket Docker Kubernetes NGINX NPM Maven Linux Android GCP Azure

AWS SpigotMC BungeeCord Bukkit Flatpak OBS Studio Cloudflare IntelliJ VS Code Eclipse

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Literary Exposure

2023

The Origins and Motivations of Univalent Foundations (2014)   The End (?) of the ALEXANDRIA Project (2023)

When is a computer proof a proof? (2023)   The ALEXANDRIA Project: what has been accomplished? (2023)

ALEXANDRIA: Large-Scale Formal Proof for the Working Mathematician (2021)

Remembering Doug Lenat (1950-2023) and His Quest to Capture the World with Logic (2023)   Category Theory I (2016)   Category Theory II (2017)

Category Theory III (2018)   HACKENBUSH: a window to a new world of math (2021)   Diheaps: a new species of algebraic structure (2023)

Quantum in Pictures (2023)   Remembering the Improbable Life of Ed Fredkin (1934-2023) and His World of Ideas and Stories (2023)

Will Computers Redefine the Roots of Math? (2015)   A Functorial Perspective on (Multi)computational Irreducibility (2022)

Residuality Theory, random simulation, and attractor networks (2022)

Bioelectric networks: the cognitive glue enabling evolutionary scaling from physiology to mind (2023)

Competency in Navigating Arbitrary Spaces as an Invariant for Analyzing Cognition in Diverse Embodiments (2022)   Chrome ships WebGPU (2023)

Get started with GPU Compute on the web (2023)   Spawning a WASI Thread with raw WebAssembly (2023)

WebGPU — All of the cores, none of the canvas (2022)

ZX-Calculus and Extended Hypergraph Rewriting Systems I: A Multiway Approach to Categorical Quantum Information Theory (2020)

Fast Automated Reasoning over String Diagrams using Multiway Causal Structure (2021)   Lagrangian Neural Networks (2020)

Quantomatic: A proof assistant for diagrammatic reasoning (2015)   The semantic conception of truth: and the foundations of semantics (1944)

Chapterhouse: Dune (1985)   Foundation's Edge (1982)   Foundation and Earth (1986)   Prelude to Foundation (1988)   Forward the Foundation (1993)

I, Robot (1950)   The Rest of the Robots (1964)   The Complete Robot (1982)   The Caves of Steel (1954)   The Naked Sun (1957)

The Rise and Fall of the Third Reich (1960)   A Project to Find the Fundamental Theory of Physics (2020)

Metamathematics: Foundations & Physicalization (2022)   Twenty Years of a New Kind of Science (2022)   The Selfish Gene (1976)

Transformer: The Deep Chemistry of Life and Death (2022)   The Vital Question: Why Is Life The Way It Is? (2015)

Interaction Combinators (1997)   Von Neumann's Impossibility Proof: Mathematics in the Service of Rhetorics (2017)

Perfectly Secure Steganography Using Minimum Entropy Coupling (2022)   General Intelligence Requires Rethinking Exploration (2022)

DensePose From WiFi (2022)   A Mechanized Formalization of the WebAssembly Specification in Coq (2019)

A Denotational Semantics for the Symmetric Interaction Combinators (2007)

Deep self-modeling as a fundamental principle in the design of intelligent systems (2022)

A.I. (Artificial Intelligence or Artificial Ignorance? (2022)

From Hume to Human AI: A return to the foundations and restrictions of hum(e)an reasoning (2022)

Building human-like intelligence: an evolutionary perspective (2022)

A Case for Computational Intelligence as Recursive Abstraction and Goal-Oriented Synthesis (2022)   Reverse Engineering WebAssembly (2018)

Toroidal topology of population activity in grid cells (2022)

A 50-Year Quest: My Personal Journey with the Second Law of Thermodynamics (2023)   Alien Intelligence and the Concept of Technology (2022)

ChatGPT Gets Its "Wolfram Superpowers"! (2023)   Computational Foundations for the Second Law of Thermodynamics (2023)

Faster than Light in Our Model of Physics: Some Preliminary Thoughts (2020)

How Did We Get Here? The Tangled History of the Second Law of Thermodynamics (2023)   Multicomputational Irreducibility (2022)

~400+ Wikipedia Articles

2022

God Emperor of Dune (1981)   Heretics of Dune (1984)   Foundation (1951)   Foundation and Empire (1952)   Second Foundation (1953)

The Art of War / Sun Tzu (6th cent. B.C.)   A Thousand Brains: A New Theory of Intelligence (2021)

Quantum: Einstein, Bohr and the great debate about the nature of reality (2008)

The Future of Humanity: Terraforming Mars, Interstellar Travel, Immortality, and Our Destiny Beyond Earth (2018)

Fluid concepts and creative analogies: Computer models of the fundamental mechanisms of thought (1995)   Gödel, escher, bach (1979)

2021