sayyad irfan ali

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Education

M.A. Economics
Aug 2018 - Sep 2020

Jamia Millia Islamia, New Delhi

- designed and developed numerical simulations in Python to analyse and explain Condorcet Paradox in Social Choice Theory

- developed, trained, and tested machine learning models in pandas and scikit-learn to predict trends during Covid-19 pandemic

B.S. Mathematics
Aug 2012 - Dec 2016

Indian Institute of Science, Bangalore

- developed a partial source filter for Agda in Haskell to analyze strategies for automated theorem-proving

- developed numerical simulations in Fortran to analyse and verify Mantle Convection models

Publications

Yashraj D. Chavhan, Sayyad Irfan Ali & Sutirth Dey

Larger numbers can impede adaptation in asexual populations despite entailing greater genetic variation.

Evolutionary Biology, 2019

- designed and implemented agent-based simulation in both Python and C to study bacterial evolution

- achieved 20x performance improvement by parallel programming in OpenMP to handle 1e10 order calculations on bacterial growth

Work Experience

Haskell Consultant
Oct 2025 - present
GeniusYield, Fragma

- consulted on deployment of high-performance orderbook system for decentralized exchange using Haskell in proof-of-stake Cardano blockchain

- developed robust backend APIs in Haskell to support automated trading bots to enable third-party integration

- designing real-world asset tokenisation framework using programmable tokens on Cardano blockchain supporting real-world regulatory compliance

Tech Lead – Haskell
Jan 2022 - present
Emurgo Academy

- led the development of a property-based testing suite in Haskell based on QuickCheck for Cardano blockchain to enable ensure correctness of Plutus smart contracts

- developed a real-time blockchain explorer in TypeScript and React to explore transactions, blocks, addresses, pools, and NFTs on Cardano mainnet

- developed a responsive interactive blockchain-builder game in vanilla JavaScript to teach fundamentals of blockchain technology to non-programmers

- developed a video management plugin on Zoom in Perl to fully automate uploading, downloading, deleting of session recordings

- managed a team of full-time and consultant trainers to deliver live-coding enabled and project-driven professional training courses on Cardano blockchain, functional programming in Haskell, and formal verification in Coq

Personal Portfolio

Pilaf

- Pilaf is a lighweight structural pattern-matching library implemented in vanilla JavaScript with zero dependencies

Myna

- Myna is a monospace font optimised for programming in sigil and operator heavy programming languages like Perl and Haskell

Skills

Programming Languages
Haskell • TypeScript • C/C++ • Python • Perl

Web Frameworks
React • Next.js • Tailwind • DaisyUI • Express.js

Web Technologies
HTML • CSS • SQL

Operating Systems
Fedora • Ubuntu

Languages

I am fluent in both English and Hindi.

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