

Dégi Nándor

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Education

Babeş-Bolyai University, Computer Science

Oct 2023 – Present

Thesis

Monadic Parser Combinators and Functional Patterns in Imperative Programming Languages

2024

Unpublished research on functional programming techniques with an accompanying Haskell-based interpreter.

Projects

Zha: AI-Generated Music with Reinforcement Learning

In Progress

- Developing an AI system using reinforcement learning and diffusion models to generate new audio and MIDI compositions.
- Tools Used: Python, Pytorch, Audio Processing, Transformer-, Diffusion-, VAE-models, React

pyHMSSQL: Database Management System

github.com/Dedzsinator/pyHMSSQL

- Led a 4-person team to develop a modern database system in Python with a CLI and a Java frontend and a Haskell Parser Combinator.
- Tools Used: Python, Java, Haskell

Seraph: Art Marketplace and Auction Platform

github.com/Dedzsinator/Seraph

- Developed a full-stack React Native platform for selling and auctioning art, featuring third-party authentication and geo-based order placement.
- Tools Used: React Native, TypeScript, MSSQL, external API's

Greedy Shop: Priority-Based E-Commerce Platform

github.com/Dedzsinator/greedy_shop

- Built an e-commerce platform where orders are processed based on a price-priority queue.
- Tools Used: React Native, TypeScript, Firebase

TypeZ: Extensible Bullet Hell Game

github.com/Dedzsinator/TypeZ

- Designed a bullet hell game in Java using design patterns for easy extension.
- Tools Used: Java, JSON

Votify: Used Spotify API for a Song Recommendation System

github.com/Dedzsinator/Votify

- Led a 3-person team to develop a backend service utilizing Spotify's old API for genre-based song recommendations.
- Tools Used: Javascript, Express, Spotify API

C+++: Online Code Execution Platform

github.com/Dedzsinator/C-

- Developed a web platform to save and run C++ and Python code from a database using a locally installed compiler and interpreter.
- Tools Used: C++, Python, MySQL, PHP, JavaScript

Offa/Plug: Guitar Amplifier Software

github.com/offa/plug

- Contributed to GUI development using extracted assets from the original software.
- Tools Used: C++, Qt, Audio Processing

Doina-Neni-Shoppja: Internal Food Ordering System

github.com/Dedzsinator/Doina-Neni-Shoppja

- Developed a fully functional food ordering and delivery system for internal school use.
- Tools Used: Php, MySQL, Javascript

Bukas-Proof-Library: Algorithm & Data Structure Implementations

github.com/Dedzsinator/Bukas-proof-library

- Rewriting various algorithms and data structures from scratch in C++.
- Tools Used: C++

Works on Request

Efficient Ticket QR Code System

Private Project

- Built a high-performance QR code reader and verifier for large-scale party entry, designed for high loads and mutual exclusion handling.
- Tools Used: React Native, Typescript, Firebase, Computer Vision

Skills and sTechnologies

Languages: C++, C, Java, C#, SQL, TypeScript, JavaScript, PHP, Python, Bash, HTML, CSS, Haskell

Technologies: .NET, Microsoft SQL Server, MySQL, Pytorch, Tinygrad, React, Linux, CMake, Bootstrap, TailwindCSS, Springboot