Ofek Gila

Computer Scientist

Personal Info

Phone

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E-mail

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Portfolio

ofek.phd

www

theofekfoundation.org

GitHub

github.com/The-Ofek-Foundation

LinkedIn

linkedin.com/in/ofek-gila

Skills

Data Structures and Algorithms

Full-Stack Development

Node.js, React, React Redux

Kubernetes, Helm, Vault, etc.

C++ (STL & various boost)

Java, Python, Go, Bash

JavaScript, HTML/CSS, etc.

Git, Gerrit, Perforce (P4V), etc.

SQL, MongoDB, etc.

ChatGPT (wrote a paper), Bard, etc.

Able and willing to learn

Education (BS and PhD)

University of California, Irvine

2021 – present **PhD:** Data Structures & Algorithm Theory

Expected Graduation Date: 2025 (Masters Awarded)

2017 – 2021 **Majors:** Computer Science (3.98), Physics (3.92)

Notable Research

WADS 2023

Zip-zip Trees: Making Zip Trees More Balanced, Biased, Compact, or Persistent

Invented a new way of balancing binary search trees that achieves optimal randomized BST average depth, memory, and height, while being strongly history independent.

- Coauthored the paper with Turing Award winner Robert Tarjan!
- Won the **best paper** award for the conference

COCOA 2023

Highway Preferential Attachment Models for Geographic Routing

Created several new randomized graph models which achieve state-of-the-art performance for greedy routing while maintaining low node degrees.

- Won the **best paper** award for the conference

Jan 2018 – 2019

Particle Physics Research

ATLAS – A Toroidal Lhc ApparatuS

Ran and analyzed simulations for particle collider research determining if hypothetical particles exist that decay into unexplored combinations of 2 gauge bosons.

Notable Software Engineering Internships (7 total)

Summer 2022

***Snowflake*'s SQL Frameworks Team**

Automated the process for dealing with data corruption issues, to quickly determine the extent of the damage as it propagates through databases and accounts. Then, created dashboards and tools to freeze the data and track progress as issues are addressed.

- Only intern to create an entire internal course on project (Snow Academy)

Summer & Fall 2019 – 2021

***Cloudera*'s Control Plane and Data Science Workbench Teams**

I lead the technical development for a new end-to-end feature of the ML platform product consulting weekly with a group of managers, UX designers, product managers, etc. I worked in a small team to build an internal tool for >100 developers to deploy modified services to a Kubernetes environment to test changes before pushing to dev.

2021
- Created end-to-end workspace migration upgrade flow.

2020
- My feature (AMPs) went public and received media attention!

2019
- Go tool has ~125 active weekly users, **saving >$2 million annually**

Summer 2018

***Synopsys*' Optical Solutions Group**

I worked with a team of experienced developers on LightTools, a leading light illumination design software product. All the development was done in C++.

- Implemented efficient file parsing (95% loading time reduction)
- Wrote extensive unit tests for my work (>100) and system tests, boost

Notable Personal Projects

2015 – 2017 **Games with AIs (7 total, website link)**

- Ultimate Tic-Tac-Toe 🔗 – Strongest bot available on web & android/iOS – Monte Carlo tree-search, JavaScript, and made Wikipedia page for game
- Connect Four 🔗 – Very strong bot that doesn't use any lookup tables, nor mathematical solution - Monte Carlo tree-search, JavaScript

2015 – present **Technical Blog (12 total, blog link)**

- What is the Monte Carlo tree search? 🔗 – blog explaining pros and cons of MCTS for game AI, with a detailed generic implementation - Jekyll, markdown
- Knight Moves 🔗 - blog containing 2 unique $\mathcal{O}(1)$ solutions for the chess Knight's shortest path problem - algebra, induction, Jekyll, markdown