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), Gemini, 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 (Master's awarded)

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

Notable Research (including 2 best paper awards 🏆)

CIAC 2025 — **Fast Geographic Routing in Fixed-Growth Graphs**

Introduced a new generalization of lattice graphs called fixed-growth graphs, proving tight greedy routing and diameter bounds for highway networks in these graphs.

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!

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.

Jan 2018 – 2019 — **Particle Physics Research**

ATLAS – A Toroidal Lhc ApparatuS

Analyzed collider simulations, searching for evidence of novel hypothetical particles.

Notable Software Engineering Internships (8 total)

Summer 2022 — ***Snowflake*'s SQL Frameworks Team**

Automated the process for programmatically dealing with data corruption, to quickly determine the extent of the damage as it propagates through databases and accounts.

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

Summer & Fall 2019 – 2021 — ***Cloudera*'s Control Plane and AI Inference Teams**

I lead the technical development for a new end-to-end feature consulting weekly with a group of managers, UX designers, product managers, etc. I built an internal tool for >100 developers to seamlessly develop in dev Kubernetes cluster w/ fake isolation.

2024 — Architected and implemented three persistent application serving methods

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