Koray Akduman

This public resumé may contain some privacy-related redactions! If interested in the full version, email {first}.{last}@yale.edu

EXPERIENCE

Executive Director & Founder **Oct. 2018 - Present**
Birdflop, 501(c)3 | St. Louis, MO

- Spearhead the development of free and open-source software with 40,000+ monthly users incorporating Python, SQL, MongoDB, REST APIs, and HTML/CSS/JS to provide publicity and improve services.
- As a sysadmin, assemble, configure, and troubleshoot/debug rackmount Linux servers hosting Python, JS, and Java applications (via JVM) for 200+ clients using UNIX, Nginx, Docker, and Bash, generating $30,000+ in annual revenue.
- Publish articles and videos reaching 100,000+ readers/viewers.
- Provide direct support to 600+ users using custom-developed Python software.

Biosecurity Research Fellow **Jul 2023 - Aug 2023**
Rethink Priorities / Existential Risk Alliance (ERA) | Cambridge, UK

- Extracted over 200,000+ genetically-engineered sequences through web scraping techniques in Python.
- Conducted an independent research project, biologically featurizing 200,000+ genetically-engineered sequences, performing evolution and statistical analysis using Python with NumPy, Pandas, and PyTorch across 5,000+ lines of code, resulting in a comprehensive database of genetically-engineered sequences featurized into human-interpretable variables.
- Using biologically-significant featurization, independently developed competitive machine learning models achieving a 92% accuracy rate in locating correct sequence designers within the top-10 rankings out of 2,100 labs, surpassing leading models.
- Independently drafted a publication for submission to scientific journals, detailing evolution in genetic engineering over time.

Undergraduate Researcher **Feb. 2022 - Present**
Yale University School of Medicine (Ring Lab) / Yale Department of Computer Science (van Dijk Lab) | New Haven, CT

- Help develop LLMs contributing to the understanding cellular processes.
- Conduct research into the causal relationship between autoantibodies and several diseases.
- Develop and use a yeast library for Rapid Extracellular Antigen Profiling (REAP) to comprehensively profile the autoantibodies of patients against 6,000 targets.

Director & Co-Founder **Jun. 2022 - Present**
Yale Existential Threats Initiative (YETI) | New Haven, CT

- Oversee all organizational activities, identifying and implementing improvements, and actively promoting careers related to existential risk mitigation within the Yale community, resulting in membership growing from 0 individuals to 50.
- Design and oversee 8-week fellowships, engaging and educating 12 participants on forecasting and biosecurity, consistently receiving positive feedback for the program's value and impact.
- Led a team of 4 to 1st/12 ($2,250 prize) in the Spring 2023 OPTIC Undergraduate Forecasting Tournament.

EDUCATION

Yale University (New Haven, CT)
Bachelor of Science, Computer Science | GPA: 3.94/4.0 | C.S. GPA: 4.0/4.0 **Expected May 2025**
Coursework in Data Structures, Algorithms, Systems Programming, Embedded Systems, Multivariable Calculus, Discrete Math, Linear Algebra, Machine Learning (ML), Applied ML, Medical Software, Biology, Organic Chemisty, Physics, Biochemistry

PUBLICATIONS

- Klein, J., … **Akduman, K.**, … Iwasaki, A (2023). ***Distinguishing features of Long COVID identified through immune profiling***. **Nature**. - 153 citations

PROJECTS (https://github.com/kakduman)

Botflop (https://github.com/birdflop/botflop) **Jan. 2021 - Present**
An open-source Discord bot in JavaScript that analyzes timings delay reports to suggest mitigations for common Minecraft server issues and automatically uploads text files to a globally accessible bin. Botflop has helped 300,000+ users in 1,800+ Discord servers.

Content Distribution Network **Jul. 2021 - Present**
Maintain a Content Distribution Network (CDN) for Birdflop to make locally hosted files available across the world.

Sir Stabby's Perpetual Motion Machine (https://github.com/AddisonGoolsbee/sir-stabbys-torture-device) **Dec. 2023 - Dec. 2023**
An embedded system created in Python & C++ featuring voice FFTs, two-way wireless communication, OpenAI APIs, and ESP32s.

Binflop (https://bin.birdflop.com) **Feb. 2021 - Jul. 2021**
Created a fork of the original https://hastebin.com that patches bugs and adds improvements, as listed here.

BirdTickets (https://github.com/birdflop/BirdTickets) **Feb. 2021 - Aug. 2021**
Created an open-source Python Discord bot that allows Discord servers to incorporate a free and advanced ticket system.

Birdflop Panel Bot **Jan. 2021 - Mar. 2021**
Created a Discord bot in Python to communicate with the Birdflop game panel API to link Discord and game panel accounts.

RGBirdflop (https://rgb.birdflop.com | https://github.com/birdflop/website) **Feb. 2021 - Mar. 2021**
Developed a website with 30,000+ monthly users that calculates and formats hex code gradients for Minecraft.