Ezra Silver-Isenstadt

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EDUCATION

The University of Maryland, College Park | Honors College | College Park, MD **Expected May 2026**
B.S. in Computer Science, B.M. in Music Composition, Minor in Philosophy | GPA: 3.9/4.0
Banneker/Key Scholar: One of ~75/57,220 awarded an all-expenses merit scholarship; featured as model B/K student for new students
Relevant Courses: Object-Oriented Programming, Computer Systems, Organization of Programming Languages, Discrete Structures, Algorithms, Web App Development, Advanced Data Structures, Machine Learning

TECHNICAL SKILLS

Programming: Java, Python, JavaScript, HTML/CSS, C, Rust, OCaml
Tools/Frameworks: Git, Node.js, MongoDB, React, Unix Command Line, Neovim

WORK EXPERIENCE

Lead Guitarist on Two National Tours with Lyn Lapid **Fall 2022 - Summer 2023**

- Played 20 cities in the U.S./Canada including sold-out 600-person venues like the Bowery Ballroom (NYC) and the Roxy (L.A.)
- Used organizational and communication skills to keep the production running smoothly and maintain camaraderie while circling the entire perimeter of the US in a full tour van
- Performed a full opening set of my original music when the tour's opening artist fell ill

NASA Goddard Space Flight Center Intern | Greenbelt, MD **Summer 2020**
Satellite-Based Mapping of Global Environmental Change

- Programmed in JavaScript using the Google Earth Engine cloud-computing platform and API
- Collaborated with mentors to create four user-friendly web applications, analyzing satellite data (including the Landsat series) to visualize climate change impacts
- Designed an intuitive UI that allows users to observe ice melt, hurricane disturbances, droughts, and precipitation

PROJECTS

Ike: A Chess Engine (Rust)

- Generated legal moves in parallel using bit manipulations on piece bitstrings, as well as pre-computation alongside magic bitboard hashing to find all sliding piece moves in O(1), resulting in 20 million moves/sec
- Used advanced game tree search algorithms like negamax and alpha-beta pruning to find the best move
- Encoded my knowledge of chess into an evaluation function that accounts for nuances like central control and pawn structure

MicroCaml (OCaml)

- Developed a lexer, parser, optimizer, type-checker, and interpreter for a simplified programming language
- Regex powers lexing, a context-free grammar structures parsing, subtyping and type-checking rules verify well-typed expressions, and operational semantics define interpretation
- Optimizations include constant folding, constant propagation, and short-circuiting

A Shell (C)

- Created a Unix-like shell that executes commands, manages processes, and supports input/output redirection
- Implemented control structures including pipes, subshells, and command conjunctions (AND, OR), enhancing command flexibility
- Managed file descriptors, enabling user-specified input and output files

LEADERSHIP

Animals for Animals at the University of Maryland | President **2022-2024**

- Led workshops on persuasive animal-rights activism
- Ran tabling events, scheduled guest lecturers, hosted documentary screenings
- Coordinated advocacy efforts with partner organizations

March For Our Lives, Howard County | Co-Lead **2019-2020**

- Organized gun violence prevention efforts
- Held voter registration drives
- Worked with allied chapters and organizations to lobby lawmakers

OTHER

- Scaled an Instagram account to over 10k followers with music theory instructional videos
- Other Projects: Regex acceptance with NFA to DFA (OCaml), Text editor (C), Personnel database (Java), Calendar (C)
- Other Skills: Piano, Guitar, Alto Saxophone, Music Production (Logic), Video Production (Final Cut Pro), Public Speaking