DAVID PETRE

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EDUCATION

The University of Chicago   **Chicago, IL**
Bachelor of Science in Computer Science, Bachelor of Arts in Economics, Minor in Mathematics   *Expected, June 2025*
- Honors: Chicago Public Schools Full Tuition Merit Scholarship, National Merit Scholar, Illinois State Scholar.
- Relevant Coursework: Theory of Algorithms, Computer Systems, Database Systems and Design, Discrete Mathematics, Linear Algebra, Proofs in Analysis, Statistics: Models and Methods, Economic Analysis, Investments, Financial Accounting, Robotics
- Extracurriculars: Philosophy Club, Grappling Club, CompileHer, Chicago Maroon, UC Socially Responsible Investment Group

PROFESSIONAL EXPERIENCE

CNC Designs – *Small Business focused on Insert manufacturing.*   **Chicago, IL**
Partner   *August 2021 – Present*
- Cofounded a manufacturing firm that produces effective table saw inserts for top brands such as DeWalt, Bosch, and SKIL.
- Personally built, polished, and quality tested >4,000 table saw inserts. Went to the shop during my school breaks and on weekends.
- Designed two inserts using AutoCAD for the SKIL and Bosch lines which generated >$20,000 in revenue because of extensive market research to gain competitive advantage.

University of Chicago Department of Computer Science   **Chicago, IL**
Grader – MPCS 51046: Intermediate Python Programming   *September 2023 – Present*
- Participate in the code review of >20 graduate-level students studying python programming at the University of Chicago.
- Partnered with the course design staff to update assignments, develop grading rubrics, and establish the course outline.

Center for Spatial Data Science | Anselin Lab – *UChicago research lab focused on the development of GeoDa.*   **Chicago, IL**
Software Engineer Intern   *May 2023 – September 2023*
- Upgraded the GeoDa graphics library to a more modern implementation using React and Kepler.gl.
- Assisted in refactoring the GeoDa Javascript library (Composed of >1000 lines) into Typescript.
- Improved documentation on the GeoDa ecosystem by making grammatical / textual edits.

Momentus Capital – *Private Impact Investing Firm*   **Chicago, IL**
Market Research Intern   *January 2023 – March 2023*
- Researched >200 small businesses across the United States to properly target them for low-interest loans according to both profitability and ESG metrics.
- Wrote a python script that automated the procedure for the team to accelerate the development of the deliverable.

TECHNICAL PROJECTS

DavidShell – *Implementation of a shell written in C*   *May 2022*
- Built a shell that can take commands from the user, parse those commands, and execute them for my systems programming course.
- The end project utilized multithreading to improve performance and was composed of >600 lines of C code.

DaDB – *Database Management system written in Rust*   *May 2023*
- Wrote a database management system in Rust that was composed of >700 lines of multithreaded code for my database systems class.
- Implemented queries based on operators found in Relational Algebra (Such as Join, Group By, and Aggregate)
- Designed a solution to serialize data to disk and to retrieve that data as personally designed database pages.

Popsort – *Homemade sorting algorithm written in Python*   *September 2023*
- Designed and wrote a sorting algorithm that models a list as a population and performs 'life cycle' operations upon it analogous to birth and death in order to successfully sort it.

SKILLS & INTERESTS

Programming Languages: Proficient: Python, Rust, C, Javascript / Typescript, HTML / CSS, SQL. Working Knowledge: Haskell, Golang, R, C++, SML, Typed Racket.
Frameworks / Computer Skills: Proficient: React, NextJs.13, TailwindCSS, NumPy, Pandas, MySQL, Git, Bash scripting. Working Knowledge: Tidyverse, Nix / NixOs / ROS.2
Languages: English – Fluent | Romanian – Native Speaker | Mandarin Chinese – Working knowledge | French – Elementary command
Other: SAT: 1550/1600 (800 Math)
Interests/Hobbies: Brazilian Jiu Jitsu, Kickboxing, Reading, Camus, Robotics, Starcraft 2.