Matthew Laws

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EDUCATION

Williams College, Williamstown, MA   Expected June 2025

B.A. Computer Science, Achievements: Dean's List; Class of 1960 Scholar; GPA: 3.88 (Major) / 3.81 (All)

- Relevant Coursework: Operating Systems, Machine Learning, Computer Graphics, Programming Languages, Algorithms & Analysis, Computer Organization, Data Structures, Linear Algebra, Multivariable Calculus, Discrete Mathematics, Probability, and Statistical Modeling

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TECHNICAL SKILLS

- **Programming Languages**: C, Python, Java, JavaScript, React, R, C++, Shell Script, SQL, Go, F#
- **Tools:** NodeJS, Git, Ab Initio, OpenGL, GLSL, Postgres, Snowflake, x86, LaTeX, AWS, Scikit-learn, .NET

SELECTED PROJECTS

- **IAS Regression Testing Engine:** While working at IAS, developed a test engine capable of regression and ad hoc testing to validate new twitter pipeline code for backward compatibility
- **Williams College Rugby Website:** Developed and launched a website for the Williams College Rugby Team from ground up using React and hosted through AWS s3 @ williamscollegerugby.com
- **Thread Library, Disk Scheduler, & Memory Manager:** Using C, implemented a uni-core thread library with synchronization primitives, a process level disk scheduler using the thread library, and implemented a memory pager with multi-process scaling.
- **Mini Golf Game:** Created a ray traced 3D Mini Golf game with blinn-phong lighting game using OpenGL
- **Jefferson University Computation Medicine Center - PubMed Text Scraping:** Used R to text-scrap medical journals and automatically curate a database with associations between miRNA and diseases

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WORK EXPERIENCE

Computer Science Dept., Williams College, *Science Research Fellowship*   June 2023 – Present

- Work with Professor Sam McCauley to develop an faster Succinct Rank and Select Data Structure
- Studied and presented the relevant literature to Professor McCauley and helped fine tune a new structure
- Implemented multiple new designs in C and optimized them for cache efficiency and speed
- Helped draft a paper describing our results to submit for publication

IAS Scholars, Integral Ad Sciences, *Data Engineering Intern*   June 2022 – August 2022

- Studied both the business and technical sides of IAS's Twitter brand safety project
- Completed a full data profile of the relevant IAS Twitter data using complex SQL queries in Postgres
- Used Agile Methodology to manage my group's project design and flow

Computer Science Department, Williams College, *Teaching Assistant*   Sept. 2022 – Present

- Serve as a TA for an introductory data structures course and a computer organization course
- Host three weekly open help sessions for students to attend

Williams Students Online (WSO), Williams College, *Frontend Developer*   Sept. 2023 – Present

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COMMUNITY ENGAGEMENT AND LEADERSHIP

Junior Advisor, Williams College, *JA*   Feb. 2021 – Present

- Mentored 35 incoming freshman in the class of 2027 through living alongside them in the dorm
- Serving as a contact point, advisor, and advocate for them during their first year of college

Williams Rugby Club, Williams College, *Assistant Captain*   Sept. 2021 – Present

- Work to acclimate new players to the team, supporting them on and off the field throughout the year
- Help organize and run practices four days a week, in addition to weekly games while in-season

Williams Recovery of All Perishable Surplus (WRAPS), Williams College, *Shift Leader*   Sept. 2021 – Present