ELIOT H. SOLOMON

www.eliot.so • Pittsburgh, PA

EDUCATION

Carnegie Mellon University May 2029
PhD in Computer Science (Advisors: Dimitrios Skarlatos and Todd C. Mowry) *Pittsburgh, PA*

Rice University August 2024
MS in Computer Science (Advisor: Alan L. Cox) *Houston, TX*
Thesis: *Effective Techniques for Managing Intermediate-Sized Superpages*
Awards: Rice CS Graduate Research Fellowship (full funding), Louis J. Walsh Scholarship in Engineering

Rice University May 2023
BS in Computer Science (Specialization: Computer Systems) *Houston, TX*
GPA: 3.98/4.00, *summa cum laude*
Awards: Outstanding Senior Engineering Student (CS), Rice Engineering Alumni Junior Merit Award, Chevron Scholarship, McMurtry Committee of the Year, McMurtry Academic Award, President's Honor Roll, National Merit Scholar

TECHNICAL SKILLS

C, C++, Rust, Java, Go, Python, Git, SQL, LLVM, kernel development, Linux/FreeBSD system administration, LaTeX

PUBLICATIONS

Patrick H. Coppock, Brian Zhang, **Eliot H. Solomon**, Vasilis Kypriotis, Leon Yang, Bikash Sharma, Dan Schatzberg, Todd C. Mowry, and Dimitrios Skarlatos. 2025. "LithOS: An Operating System for Efficient Machine Learning on GPUs." arXiv:2504.15465 [cs.OS].

Eliot H. Solomon, Yufeng Zhou, and Alan L. Cox. 2023. "An Empirical Evaluation of PTE Coalescing." In *The International Symposium on Memory Systems (MEMSYS '23), October 2–5, 2023, Alexandria, VA, USA*. ACM, New York, NY, USA, 16 pages. https://doi.org/10.1145/3631882.3631902 (preprint)

RESEARCH EXPERIENCE

RiceArch Group, Department of Computer Science, Rice University May 2021 - August 2024

- Collaborated with Prof. Alan Cox to implement transparent 64KB superpage support into FreeBSD on ARM CPUs (info)
- Collected empirical performance counter data to investigate the PTE Coalescing feature of AMD's Zen microarchitecture
- Achieved a 15.67% speedup on a compilation-heavy workload and upstreamed multiple new patches to mainline FreeBSD

Bioinformatics Group, Department of Computer Science, Rice University May 2020 - December 2020

- Evaluated statistical methods for inferring evolutionary networks from genetic data, working under Prof. Luay Nakhleh
- Automated data generation, parsing, and analysis using a computational pipeline built using 2000+ lines of Python code
- Improved result accuracy by running repeated large-scale simulations in a large university cluster computing environment

TEACHING EXPERIENCE

Head Teaching Assistant, COMP 614, Rice University Fall 2023

- Produced solution sets used by 3 TAs to teach introductory programming to 60+ new Master of Data Science students
- Created and typeset new exam questions from scratch, covering a mixture of Python, math, and data science content

Head Teaching Assistant, COMP 321, Rice University Fall 2022, Spring 2023

- Oversaw the course staff and coordinated grading for an intro computer systems class with 210+ students and 11 TAs
- Implemented tools which reduced the amount of manual intervention needed to autograde programming assignments

Teaching Assistant, COMP 182, Rice University Spring 2021, Spring 2022

- Graded homeworks and guided lab sessions for an introductory discrete math and algorithms class with 300 students
- Played an extremely active role on the course's Piazza forum, providing a significant portion of the instructors' answers

Teaching Assistant, COMP 215, Rice University Fall 2021

- Held office hours for an object-oriented programming class with 200+ students, emphasizing principles rather than answers
- Proofread course exams, helping to eliminate mistakes, potential ambiguities, and timing issues through careful review

Teaching Assistant, MCS Bootcamp, Rice University Summer 2020

- Taught discrete math to a group of incoming Rice Master of Computer Science students by leading live problem sessions
- Developed 25 quizzes and 5 problem sets to help optimize learning outcomes for students coming from non-CS backgrounds

LEADERSHIP EXPERIENCE

Office of Academic Advising, Rice University March 2021 - May 2023
Head Academic Fellow *Houston, TX*

- Managed a team of 30+ Academic Fellows at McMurtry College, facilitating peer tutoring events and personalized help
- Conducted interviews to recruit 25+ new Academic Fellows yearly based on their academic merit and interpersonal skills
- Explained computer science concepts to students one-on-one and in small groups, targeting content to individual needs

Rice Computer Science Club September 2020 - May 2023
Co-President (2022-23), Co-Internal Vice President (2021-22), I/O Committee Member (2020-21) *Houston, TX*

- Led a 12-person officer team in charge of planning academic, social, and recruiting events for Rice's largest club and major
- Spearheaded an event series focused on introducing undergraduates to opportunities in the tech industry and grad school
- Improved the club's annual senior exit survey to collect data relevant to departmental diversity and inclusion initiatives

McMurtry College, Rice University September 2019 - May 2023
Seniors Cmte. (2022-23), External Socials Head (2021-22), Treasurer (2020-21), First-Year Rep. (2019-20) Houston, TX

- Coordinated Y2K, the first "public party" at Rice following the COVID-19 pandemic, with 900+ student attendees (press)
- Designed a streamlined expense management system for the $50K+ yearly budget of a 400+ student residential college
- Researched student needs through focus group sessions to help develop a detailed five-year strategic plan for the college

Technology Sector, Rice Undergraduate Investment Fund September 2019 - May 2023
Sector Director (2021-23), Senior Analyst (2020-21), Junior Analyst (2019-20) *Houston, TX*

- Guided a team of 8 analysts through the process of preparing live stock pitches for Spotify, Airbnb, Roblox, and Datadog
- Constructed an investment thesis central to a successful pitch for Cloudflare focused on edge computing and cybersecurity
- Proposed an investment in Twilio which became the Fund's best-performing stock throughout my first year as an analyst

VOLUNTEERING EXPERIENCE

Computer Science Department, Carnegie Mellon University October 2024 - present
PhD Student Council Member *Pittsburgh, PA*

- Helped run the department's mentorship program for first-year PhD students and secure external funding for the council

School of Computer Science, Carnegie Mellon University October 2024 - present
Mentor, Graduate Application Support Program *Pittsburgh, PA*

- Provided feedback on application materials for under-resourced and/or underrepresented prospective CS PhD students

Office of Admission, Rice University October 2024 - present
Alumni Interviewer *Remote*

- Conducted interviews of prospective undergraduate students to assess interests, communication skills, and cultural fit

PERSONAL PROJECTS

MurtPass Java, jte, PostgreSQL, HTML/CSS/JavaScript

- Built a customized ticketing and access control system tailored to the needs of McMurtry's "public party" Y2K (press)
- Implemented features like Google Sign-In, QR code scanning, an automated waitlist, and a Venmo payment tracking tool
- Deployed the system to a secure Linux cloud server, achieving consistent sub-40ms response times even with 2000+ users

OTHER INTERESTS

Literature, history, economics, current events, international relations, playing basketball, watching football, most music