

SAMUEL LEROSE

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Organized, attentive, and driven physics student attending the University of Kentucky with experience in digital signal processing seeking a summer internship to further develop my skills in nuclear and computational physics.

EXPERIENCE

AUGUST 2022 – PRESENT

UNDERGRADUATE PHYSICS RESEARCHER, UNIVERSITY OF KENTUCKY

I conduct computational physics research under Dr. Christopher Crawford developing custom digital signal processing algorithms on open-source field programmable gate arrays. I was awarded the competitive UK Arts & Science Summer Undergraduate Research Award for 2023, during which I created a proof-of-concept design that filters and measures artificial signals to within expectations. I also developed a *GitHub* repository of automated scripts and detailed instructions allowing end users with minimal experience to recreate the project. I have plans to improve the current design and create new projects in the future. My accompanying research paper is available upon request.

NOVEMBER 2021 – PRESENT

PRIVATE PHYSICS TUTOR, UNIVERSITY OF KENTUCKY

I tutor college students in introductory physics courses and explain concepts at an individualized level to guide them to a better understanding of course material. This role improves my communication, time management, and organizational abilities as I balance sessions with my personal course load.

MAY 2022 – AUGUST 2022

GARDEN ASSOCIATE, THE HOME DEPOT

I provided excellent customer service as a part-time Garden Associate at The Home Depot, primarily helping customers find and purchase items while maintaining clean and orderly store aisles. I gained experience operating heavy machinery safely and efficiently. This position strengthened my collaborative skills and ability to work independently in a fast-paced environment with minimal supervision.

EDUCATION

PRESENT – MAY 2025

B.S. IN PHYSICS, MINOR IN MATHEMATICS, UNIVERSITY OF KENTUCKY

A current third-year student with a 4.00 GPA. My coursework primarily encompasses higher-order math and science including differential and integral calculus, computational data analysis, electro- and magnetostatics, and classical mechanics. Additionally, I've strengthened my overall education by taking courses in English composition and communication and Japanese language and culture. I am a member of the Dean's List and the Lunsford Scholars Program, a competitive academic program that supports my interest in extracurricular education related to positive citizenship and public service.

KEY SKILLS

- ✓ Organization and adaptability.
- ✓ Balancing multiple obligations.
- ✓ Conflict mediation and resolution.
- ✓ Collaboration and communication.
- ✓ Proactive in all commitments.
- ✓ Attentiveness and critical thinking.
- ✓ Troubleshooting and process improvement.
- ✓ Technical and instructional writing.

Computer Skills: Python | Verilog | LaTeX | Windows | WSL (Ubuntu) | MS Office | Vivado | GitHub

Language Skills: Elementary Japanese

ACTIVITIES AND REFERENCES

At the University of Kentucky, I served as the president of the Society of Physics Students (SPS) in 2023. During my term, I maintained a tight-knit community of peers who have and continue to support one another in academics, scholarship and internship applications, research, and personal projects. Beyond academia, I fostered a strong sense of fellowship amongst members, emphasizing the importance of a social community. Additionally, I organized the monthly “Cosmic Lunch,” a one-hour lunch-and-learn event featuring presentations by professors and graduate students on their current research and physics topics. These events enrich our understanding of physics and provide invaluable opportunities for students to engage in undergraduate research.

Outside of school, I am an avid rock climber, and my typical weekly routine involves several evenings at the climbing wall on campus. For me, this time is an opportunity to challenge myself physically and mentally and to decompress with friends after classes. On occasion, I also spend time at the wall setting my own routes for others to climb or volunteering my time as a belayer when the staff becomes overwhelmed, giving me a greater sense of involvement in the local community of climbers. On weekends when I can get away, I love traveling with friends to climb outdoors at the Red River Gorge where I can take on more difficult and a greater variety of routes.

Dr. Christopher Crawford – Director of Graduate Studies in the College of Arts & Sciences and the Physics Research Experience for Undergraduates, Professor of Physics at the University of Kentucky

Contact: 631 S Limestone, Lexington, KY 40508, Room 327 – c.crawford@uky.edu – Phone Number: 859-257-2504

Dr. Max Brown – Instructional Designer and Professor of Physics, Mentor of the Society of Physics Students at the University of Kentucky

Contact: 631 S Limestone, Lexington, KY 40508, Room 181B – max.brown@uky.edu – Phone Number: 859-562-3035

Ms. Yoko Horikawa – Professor of Japanese Studies at the University of Kentucky

Contact: 120 Patterson Drive, Lexington, KY 40508, Rm 1073 – yho226@uky.edu – Phone Number: 859-257-6962

Ms. Caitlin Coulter – Ph.D. Candidate and Graduate Instructor of English Writing, Rhetoric, and Digital Studies at the University of Kentucky

Contact: 120 Patterson Drive, Lexington, KY 40508, Rm 1206 – CaitlinBCoulter@uky.edu

Mr. George Cox – Store Manager at The Home Depot

Contact: 1100 Liberty Park Dr, Hurricane, WV 25526 – Phone Number (Store): 304-760-0444