Samien Rahman

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EDUCATION

The University of Texas at Austin — Aug. 2023 – May 2027
Bachelor of Science, Electrical and Computer Engineering | GPA: 3.769 — *Austin, TX*

PROJECTS

Keyboard Design | *Circuit Design, PCB Design (KiCAD), C, ARM, 3D CAD* — Aug. 2023 – Present
- Engineered ergonomic keyboard layouts emphasizing human-computer interaction and user experience design, enhancing typing comfort and efficiency.
- Developed compact, reversible, PCB designs for ease of setup and cost effectiveness
- Employed Zephyr based firmware to implement bluetooth connectivity
- Programmed firmware to be deployed on microcontrollers such as *Seeeduino Xiao nrf52840, Promicro*
- Created 3D models of keyboard prototypes for 3D printing and CNC milling using Shapr3D

Home Lab | *Ubuntu Server, Network Configuration, Apache2, Docker, HTML/CSS* — Dec. 2023 – Present
- Repurposed old computer hardware into robust home server using Ubuntu Server
- Deployed Nextcloud for self-hosted cloud storage, enabling efficient and secure photo sharing with clients, simplifying the process of data management
- Configured and maintained Minecraft server and established web maintenance portal for easy access for users
- Set up web server using Zola static site generator and *Wordpress* to host personal website and portfolio
- Established and operated a media server, organizing content for peer usage
- Utilized Docker for efficient containerization of lab services, resulting in an organized and easy to maintain system
- Implemented reverse proxying with Synology and Apache2 with SSL Certificate management, enhancing server security and accessibility
- Created and hosted *Notebook*, a public repository for academic notes relating to Electrical Engineering and Mathematics

Notebook | *Markdown, LaTeX, HTML, CSS, Git, Zola, Python* | notebook.samienr.photography — Jan 2024 – Present
- Utilized Obsidian.md for note-taking, employing markdown and LaTeX for efficient, organized, and structured documentation of various engineering and mathematical concepts
- Programmed Python scripts to convert markdown note files into compatible format with Zola static site generator
- Utilized Zola to convert markdown files into HTML and formatted visuals using CSS
- Hosted and maintained website on home lab web server using Apache2

EXPERIENCE

Undergraduate Research Assistant — Sep. 2023 – Present
Mid-IR Photonics Lab, The University of Texas at Austin — *Austin, TX*
- Contributed to development of optical signal capture system using Python to control boxcar integrator
- Utilized PyVisa to establish human-friendly interface between user and instruments

Mathematics Tutor — May 2022 – Present
- Delivered personalized one-on-one tutoring sessions in mathematics for students from middle to high school, utilizing adaptive learning techniques to cater to individual learning styles and abilities.
- Employed personalized teaching methods to enhance comprehension and problem-solving abilities
- Assisted students in mastering mathematical concepts and improving academic performance.
- Implemented visual explanations using *Desmos* and *Manim* to assist students in building intuition of algebraic and geometric concepts

Educational YouTube Channel — May 2022 – Present
youtube.com/@sorrational
- Visualized mathematical concepts in an intuitive manner for students
- Generated animations with Python programming language using the Manim library in conjunction with NumPy and Matplotlib
- Effectively employed Adobe After Effects and Adobe Premiere Pro for video composition and editing