Fardeen Rahman

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EXPERIENCE

- **FPGA Research Assistant Internship** — Adelaide, SA
  Australian Institute of Machine Learning — *Nov. 2025 – Present*
  - **LiteX**: Used LiteX to test and create FPGA Cores/System-on-Chips to explore various digital design architectures and create full FPGA-based systems.
  - **RISC-V Strucutre**: RISC-V is an open standard instruction architecture that was researched and tested under the supervision of Dr Bradley Morgan. Explored the acceleration of this platform's hardware using quantum resilient algorithms, also known as quantum cryptography.
  - **Kyber ISE**: Designed and implemented a unique CPU core, using the LiteX framework and HDL (Verilog/VHDL), integrating an open-source RISC-V core and developing a memory-mapped bus structure. Eventually, I integrated custom hardware acceleration blocks to test.
- **Full Stack Developer** — Adelaide, SA
  Realty1Global — *Aug 2025 – Present*
  - **Next.js with React and API integration**: Developed a full-stack short-term rental platform using Next.js, React, and Tailwind CSS, implementing secure booking workflows and integrating Stripe for end-to-end payment processing.

PROJECTS

- **Basys 2 VGA Controller**: Engineered and implemented a custom 640x480 VGA Controller and Pong entirely within the Basys 2 FPGA (Spartan-3E), demonstrating high-speed digital system design. Designed critical clock division and synchronization logic to derive the necessary pixel clock and generate precise Horizontal and Vertical Sync (HSync/VSync) signals required for the 60 Hz video standard.
- **fardeenrahman.com**: My personal portfolio website developed using Astro, Tailwind CSS and Typescript. Integrated content management system for easy modular editing over my career. Deployed using Vercel.
- **Adelaide University Space Society Website**: Developed an open-source website in Vercel with Next.js and React, with end-to-end Stripe payment integration. Used calendar library with React to show event schedules as well as a content management system so admin members do not have to hard-code changes.

AWARDS AND ACHIEVEMENTS

- **Jane Street Estimathon Winner** — Adelaide, SA
  Won in a group of five — *Sept. 2024*
  - **Winner**: Employed several techniques, such as Fermi Estimation and logical reasoning, to achieve the highest point total of the pool of competitors.
- **Adelaide University Principals Scholarship** — Adelaide, SA
  Recommended for academic excellence — *March. 2024*

VOLUNTEERING

- **Adelaide University Computer Science Club** — Adelaide, SA
  Social Media and Design Officer — *Oct. 2025 - Present*
  Open Source Team — *Oct. 2024 - Oct. 2025*
- **Adelaide University Space Society** — Adelaide, SA
  Marketing and Design Officer — *Nov. 2025 - Present*
  Open Source Manager — *Nov. 2025 - Present*

EDUCATION

- **Adelaide University** — Adelaide, SA
  Bachelor of Science in Computer Science — GPA: 6.29/7.00 — *March. 2024 – Present*
- **Glenunga International High School** — Glenunga, SA
  ATAR of 97.80/99.95 — *Feb. 2018 – Dec. 2023*

PROGRAMMING SKILLS

- **Languages**: Verilog, VHDL, Python, Javascript, C++, C, SQL, Typescript, Astro, HTML, Java, Assembly
- **Technologies**: Physical FPGAs, LiteX, AWS, React, Vue, Google API