Sujal Singh

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PROJECTS

◇ **Computer Graphics**

- Skylon is a web browser rendering engine written entirely from scratch which implements an HTML parser, a CSS parser and a rendering pipeline.
- Lyn is a tiny programming language built at a 24-hour hackathon that compiles input code into visual animations.

◇ **Computer Networking**

- **Delhi Police – Cybersecurity Hackathon** *February 2024*
  Secured first position and a reward of 12k INR for developing a filter that actively prevents any client device from accessing potentially malicious URLs. For proxying traffic, the wireguard mode in mitmproxy was used and filtering logic is injected via a mitmproxy addon. Source Code
- **ACT Fibernet** *March 2023*
  Rewarded 10k INR for reporting a severe flaw in the implementation of the ISP's intranet firewall rules, with another two reports that are currently a draft. Read report

◇ **3D Printer**
  Won second prize in a science fair for building a 3D printer. Currently migrating this printer to a core-xy motion system for which I'm designing the parts from scratch for fun. Source Repository.

◇ **Home Server**
  My sibling and I maintain several home servers: a firewall, two virtualization nodes running proxmox which serve various purposes including network storage, media management, 3D printer firmware and more, and a Raspberry Pi running KVM over IP for remote management. Related Repositories.

SKILLS

◇ **Languages:** Proficient in Python. Familiar with LaTeX, HTML/CSS, JavaScript, Bash, OpenSCAD.

◇ **Others:** Git, Docker, Linux Administration, Autodesk Fusion.

EDUCATION

◇ **University School of Automation & Robotics** *2023 – 2027*
  Bachelor of Technology in Industrial Internet of Things. GPA: 7.4

◇ **St. Xavier's School, Rohini** *2010 – 2022*
  Central Board of Secondary Education Percentage: 82%