SPARSH

INNOVATOR & DEVELOPER

PROFILE

I am Sparsh, an innovative Computer Engineering student at NUS and founder of Incy Tech. My journey in technology and sustainability has led me to develop solutions like the Thermal Floater, blending creativity and expertise to address global challenges. As a mentor and entrepreneur, I am committed to shaping a better tomorrow through technology and environmental stewardship.

CONTACT

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EXPERIENCE

2021 - NOW

INCY TECH

CEO, Founder

- Founded a startup developing innovative solutions to reduce carbon footprint
- Lead R&D on renewable energy devices like Thermal Floater that converts solar-thermal energy to electricity
- Published original research investigating advanced thermoelectric materials and applications

2020 - NOW

FREELANCER

Freelance Developer & Designer

- Contributed to diverse freelance projects including web development, UI/UX design, 3D modeling, and animation
- Notable clients include Keychron, SinoLion Capital, Alag Labs, NUS Photographic Society
- Developed unique, interactive websites and digital experiences using React, Node.js, Three.js, & more.

2018 - 2022

ATAL TINKERING LABS

Student Mentor

- Guided 60+ students in design thinking, IoT, 3D modeling, prototyping, and other STEM skills
- Organized 10-day workshop for 50 students from NGOs and orphanages to gain hands-on experience in innovation
- Developed customized curriculum and delivered engaging lessons in computer science, design thinking & robotics
- Recognized for effectively fostering creative thinking and problem-solving abilities in students

EDUCATION

2022 - 2026

BACHELOR OF ENGINEERING

NATIONAL UNIVERSITY OF SINGAPORE

- Computer Engineering, Second Major in Innovation and Design Programme
- Honours programme at NUS College

2010 - 2022

ALL INDIA SECONDARY SCHOOL EXAMINATION

RADIANT INTERNATIONAL SCHOOL

- 94% in AISSE
- 1st place in multiple National Science, Cyber, International English, Maths and Social Science Olympiads

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PROJECTS

THERMAL FLOATER

- Developed a mechanism to generate electricity from solar-thermal energy with 670 W/m² output
- Improved efficiency through ANSYS simulations and incorporated feedback from user interviews
- Published research paper investigating advanced thermo-electric materials like skutterudites and selenium alloys
- Won international acclaim, including Children's Climate Prize 2023, Youth Ideathon Award, Samsung Solve for Tomorrow, NGFP-YV Award, Young Eco Hero Award & James Dyson Award

SEWAGE CLOG REMOVER ROBOT

- Fabricated wirelessly controlled robot to unclog drains and collect garbage from sewers
- Controlled autonomously via OpenCV computer vision and options for controlling remotely via a mobile app with an ESP8266
- Awarded 1st prize among 133,000+ students in national innovation challenge - Ideate for India

AGRO II

- Designed a free-space laser communication system with dynamic alignment for off-grid voice comms
- Won the National ATL Space Challenge's amongst 6.5K+ students & received prizes by ISRO & CBSE

DRIPCHECK

- Developed a multimodal image recognition AI web app to provide fashion feedback
- Trained vision models on extensive dataset of fashionable outfits sourced from social media
- Incorporated natural language capabilities for an engaging, conversational user experience
- Hosted on Azure VM with Nvidia A1000 GPU

STABLE DIFFUSION MODEL

- Engineered a custom Stable Diffusion model optimized for 4GB VRAM over 6 months of tuning
- Leveraged AWS's A1000 GPUs for training on a dataset with 500M anime-style images
- Achieved exceptional image & hand generation comparable to models requiring 16GB+ VRAM

THERMO-GRIP

- Designed an innovative wireless computer mouse powered by a user's hand heat
- Provided a sustainable, battery-free solution to reduce electronic waste
- Developed a custom curved peltier module and stabilization circuitry with 15ms response time

WEBSITES

pawsiblefoods.com • alaglabs.com • weev.dev • montage2023.github.io • keychron.in

SKILLS

Adobe CC Suite
Photoshop, Premeire Pro, After Effects

CAD Modelling
Solidworks, Fusion 360, Mol 3D, Blender

Simulation
Fusion 360, Ansys Simulation

Programming
C, C++, C#, Python, Java, JavaScript, SQL, GML, Svelte, React.js, Node.js

Development Tools
Unity, Android Studio, Git, Visual Studio

Development Boards
Raspberry Pi, Arduino, ESP Dev Kits, FPGA

EXPERTISE

- UI Design
- UX Design
- Graphic Design
- Video Editing
- Product Rendering
- Animation
- Creativity
- IoT Development
- Simulations
- Front-End Web Dev
- Prototyping
- Team Leadership
- Time Management
- 3D Design