Rameet Singh Sachar

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Skills

Languages: C/C++, Python, Embedded C, C#, SQL

Technologies & Tools: Arduino, Raspberry Pi3/4/5,Jetson Nano, ESP 8266, ESP 32/C3/S3, OpenBCI Cyton 8 Channel, STM32, I2C, SPI, UART, BLE, WiFi, ESP-NOW, Arduino IDE, RTOS, MATLAB, Firebase,Dart, Flutter, Fusion 360, Ultimaker Cura, Prusa Slicer, OpenBCI GUI, LSL, Easy EDA, **PCB Designing**, and Signal Processing.

Work Experience

AIIMS Delhi, India **(Fellow)**   Jan 2025 - Ongoing
- Executed the "Identify, Invent, Implement" biodesign methodology to validate unmet clinical needs through immersion at AIIMS and develop affordable, commercially viable healthcare solutions.

IIT Delhi Delhi, India **(Junior Research Fellow)**   Sep 2024 - Jan2025
- Working under **Centre for Biomedical Engineering, CARE-DAT Departmen**t on the research and development of assistive devices for neurorehabilitation aimed at stroke-affected patients with upper limb disabilities.
- Designed a smart rehabilitation glove using EMG, IMU, and haptic motors for upper-limb stroke recovery with real-time motion and muscle feedback.
- Testing at hospitals in collaboration with the **All India Institute of Medical Sciences (AIIMS), New Delh**i.

Brainovative Labs Pvt Ltd Delhi, India **(Founder and CEO)**

June 2022 - June 2024
- **Researched and prototyped** the VANI **Silent Speech Recognition Device** for laryngeal patients to improve communication
- Engineered the **Flexiwave EMG sensor**, significantly enhancing biomechanics accuracy by **10%** through adjustable gain.
- Secured ₹**10 lakh in grants** for project development by **DST NIDHI Prayas** through **TIDES IIT Roorkee**, accelerating innovation.
- Obtained ₹**6 lakh in funds** from **AICTE, Ministry of Education** for advancing research projects.
- **Sponsored Hack VSIT 5.0**, fostering innovation and supporting the tech community.
- **Skills**:.Brain-computer Interfaces, Machine Learning, Signal Processing, Biopotentials, Embedded Systems, Product Development, Project Management, Research & Development

NeuroTechX India **(** Core Team Member **)**   June 2021 - Oct 2023
- Increased membership and engagement by **20%** and community participation by **30%** through effective outreach and event organisation.
- Enhanced impact and reach by **20%** through targeted engagement strategies
- **Skills :** Community Outreach, Event Management, Strategic Planning, Public Speaking, Team Collaboration, Leadership, Communication

.**Lunavo** United States (Researcher)   Jul 2020 - Dec 2020
- Developed a **smart mirror** with voice recognition and touch-screen capabilities, improving user experience by **20%.**
- Created a **smart plant pot** with automatic watering and soil moisture sensors, enhancing user convenience by 30%.
- IoT, Smart Devices, Voice Recognition, Touch-Screen Technology, Mobile Apps, Product Development, User Experience Design, Remote Work

Hybrid Labs   Delhi, India (Researcher)   June 2018 - June 2019
- Designed a **smart helmet** with stop indication lights, turn indicators, and Bluetooth speakers, enhancing cyclist safety by **20%.**
- Worked on AR projects like **AR Smart education and advertisements using Vuforia**, a increasing user engagement and satisfaction by **20%**
- Product Development, IoT, Augmented Reality, Vuforia, Smart Devices, Signal Processing, Bluetooth Technology, Project Management, Research & Development

Education

Bharati Vidyapeeth's College of Engineering   (MCA)   CGPA: 9.3 (2022)
Vivekananda Institute of Professional Studies (BCA)   CGPA: 7.9 (2020)

Projects and Publications

Publications
- **Sign Language Recognition System**: Published on SSRN, April 21, 2021. Publication Link

Projects
- **Smart EOG Glasses**: Innovated glasses that capture a photograph with a blink of an eye using Electrooculography (EOG). Project Link
- **Posture Correction T-shirt**: Designed a smart t-shirt with haptic feedback, calibration features, and app connectivity to aid in posture correction. Project Link
- **Alzheimer Band**: Created a GPS-enabled band for Alzheimer patients to track their location and enable two-way communication with caregivers. Project Link
- **Sign-to-Speech Glove**: Developed a glove that converts sign language to speech using NodeMCU, Firebase, and a Flutter app. Project Link
- **QR Pulse Oximeter**: Constructed a pulse oximeter that displays a QR code with resources when SpO2 drops below 95%.Project Link

Awards and Certificates
- National Innovation Contest 2020 Winner (Jan 2022): VANI project awarded by MOE, AICTE, and Innovation Cell.
- Startup India Innovation Week 2022 (Jan 2022): Presented VANI during the event celebrating #AzadikaAmritMahotsav. LinkedIn Post
- National Innovation Contest 2020 Finalist (May 2021): Selected among top 127 from 9000+ competitors by MHRD.
- Hack@fashiontech 2020 Winner (Dec 2020): Won second prize in fashion tech hackathon.

- HackVSIT 3rd Place (Mar 2019): Won 3rd prize in hackathon at Vivekananda Institute of Professional Studies.
- HackOverflow 2nd Place (Mar 2019): Won 2nd position in HackOverflow Chandigarh hackathon.
- Hack BMU 2.0 Top 5 (Mar 2019): Achieved top 5 finalist position.
- CyberCup 2019 Finalist (Jan 2019): Finalist in CyberCup 2019 hackathon at Amity University.