Gautham Kannan **JB**

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Personal Profile

An Electronics and Communication undergraduate with hands-on experience in embedded development. I've been part of exciting projects like creating a hardware platform for learning hardware hacking and contributing to the hardware badge at this year's IC3 conference. I'm also a member of Team bi0s, where I focus on embedded development. My goal is to keep pushing the boundaries of hardware innovation in the electronics field.

Education

Amrita School of Engineering   *Amritapuri, Kollam*

B.Tech in Electronics And Communication Engineering   *2020 - 2024*

• CGPA: 8.7

Bharatiya Vidya Bhavan   *Perumthiruthi, Kozhikode*

AISSCE   *2018 - May 2020*

• Percentage: 89
• Specialised in Physics, Chemistry, and Maths with Biology

Bharatiya Vidya Bhavan   *Perumthiruthi, Kozhikode*

AISSE   *2014 - 2016*

• Percentage: 91.6

Technical Experience

Traboda Cyberlabs   *Kollam, Kerala*

Research Intern   *2023*

• Involved in a project for the IC3 conference where we designed and tested a PCB badge, created challenges, and conducted the hardware CTF for the International Cybersecurity Conference.
• Contributed to the development, testing, and optimization of the PCB badge, while also designing challenges to be embedded in it.

Bi0s Hardware   *Kollam, Kerala*

Member, Mentee   *2020 - Present*

• A team of enthusiasts working on securing devices from attacks that come from the physical device rather than the software the system runs.
• Embedded Developer and CTF player.

Keltron Knowledge Center   *Kozhikode, Kerala*

Intern   *2022*

• Completed an Embedded Systems/IOT project using Arduino Uno and ESP8266 NodeMCU on controlling the lighting remotely through a web-page.
• Employed C++ within the Arduino IDE to proficiently program embedded systems, enabling real-time data transmission between the webpage and IoT devices.
• Developed a user-friendly webpage using HTML and CSS to facilitate seamless interaction with the IoT lighting control system.

Projects

IC3 Conference   *Kollam, Kerala*

Traboda Cyberlabs   *2023*

• Organized the IC3 2023 Hardware CTF competition using a custom PCB badge.
• Designed and developed the custom PCB board.
• Designed a Side-Channel Attack (SCA) challenge focused on breaking AES encryption.

CompatrIOT   *Kollam, Kerala*

Team Bi0s   *2021 - 2022*

• Developed a custom development board with challenges for beginners in hardware security.
• The Hardware platform could be customised for various Development, Competitions and Trainings.
• Comprehensive learning experience covering all the basics of OT, IoT and Automotive security.

MITRE ECTF
Kollam, Kerala

Team Bi0s
2023

- Engaged in the MITRE eCTF competition with a focus on enhancing security in car-key fob communication.
- Developed a robust communication protocol by implementing advanced encryption methods.
- Conducted extensive testing, evaluating the protocol's resistance against diverse attack scenarios.

Hardware UI Interface
Kozhikode, Kerala

Keltron
2021

- Created an intuitive interface enabling real-time lighting control via a web page.
- Utilized ESP32 Nodemcu to seamlessly integrate the project, ensuring a dependable and high-performance platform for the interface.
- Established a user-friendly solution, enhancing the convenience and efficiency of controlling lighting in real-time through the web-based interface.

BMI App
Kozhikode, Kerala

Self Initiated
2023

- Developed a Body Mass Index (BMI) app utilizing the Flutter framework.
- Designed an intuitive app interface facilitating easy BMI calculation and seamless tracking of weight loss or gain progress.
- The app is set to empower users by offering a platform for proactively managing their health and wellness journey.

VLSI implementation of low power SRAM circuit
Kollam, Kerala

Amrita Vishwa Vidyapeetham
2023

- VLSI implementation to address power reduction challenges in Static Random-Access Memory (SRAM) circuits across 180nm, 90nm, and 45nm CMOS technologies.
- Investigating techniques to mitigate power leakage concerns caused by subthreshold leakage currents, with the aim of minimizing power consumption.
- Contributing to advancements in SRAM circuit efficiency by exploring innovative solutions to counteract subthreshold leakage, aligning with current technological needs.

Skills

Programming	Python, C, HTML/CSS, Verilog
Software	ESPIDF, KiCAD, AutoCAD, MATLAB, VScode, Keil, Caedance, Ansys, Proteus, Modelsim, LTspice, Saleae
Miscellaneous	Linux, Shell (Bash/Zsh), Latex(Overleaf/R Markdown), Microsoft Office, Git.

Achievements

2022	**Runnerup**, NULLCON Hardware CTF	*Goa,India*
2022	**Runnerup(Qualifiers)**, DSCI Embedded Security CTF	*India*

Online Courses

2021	**Foundations of Project Management,** google	*India*
2022	**Responsive Web Design**, FreeCodeCamp	*India*

Community Outreach

Student Social Responsibility
Kollam, Kerala

Amrita Vishwa Vidyapeetham
2022

- Initiated a highly impactful career guidance session exclusively designed for senior students.
- Aims were centered on providing vital support, valuable guidance, and a sense of empowerment to our peers as they confronted the intricate challenges of selecting a career path.
- Enlisted experienced professionals as guest speakers, who shared practical insights and personal experiences from diverse fields, enriching students' understanding of potential career trajectories.
- Through interactive workshops and dedicated counseling sessions, ensured students gained the necessary self-awareness and tools to make informed decisions, ultimately setting them on a confident and well-prepared course for their future careers.

Languages

English	Full Professional Proficiency
Malayalam	Native Proficiency
Hindi	Professional Working Proficiency