Gautham Kannan **JB**

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Personal Profile

Electronics and Communication graduate with 1 year of experience in embedded design and development. Proficient in PCB design, testing, and embedded software integration, with a solid background in hardware security.

Technical Experience

SBD Automotive India   *Bengaluru, Karnataka*
Automotive Cybersecurity Engineer   *9 mos | 2024*

- Part of the Cyber Security team focusing on penetration testing of vehicles, embedded devices and general automotive security.
- Designed, tested and developed hardware targets to perform advanced hardware attacks[Fault Injection attack].
- Introduced to automotive proprietary MCU's, debuggers/programmers.
- Trained to perform hardware penetration testing and also threat analysis and risk assessment

Traboda Cyberlabs   *Kollam, Kerala*
Research Intern   *6 mos | 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   *3 yrs 7 mos | 2020 - 2024*

- 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   *1 mos | 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.

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

Projects

Targets for Advanced Fault attacks   *Bangalore, Karnataka*
SBD Automotive   *2024*

- Conducted an analysis of automotive ECUs and the attacking board(Chip whisperer) to identify required components.
- Researched MCU connections, programming setups, and pin configurations.
- Designed and fabricated printed circuit boards (PCBs) for the project.
- Executed testing and programming of the PCBs to ensure functionality.

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.

Skills

Programming	Python, C/C++, HTML/CSS, Verilog, ASM[ARM, Renesas]
Software	ESPIDF, KiCAD, AutoCAD, MATLAB, VScode, Keil, Caedance, Proteus, Modelsim, Saleae, Vector CANoe
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
2022	**Responsive Web Design**, FreeCodeCamp
2023	**Designing Hardware for Raspberry Pi Projects**, Johns Hopkins University

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