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GITHUB: https://github.com/shinymonitor

Arin Upadhyay

Embedded Systems & Low-Level C Developer

SKILLS

C, Zig, Python, Assembly
Embedded Systems, Low-Level & Systems Programming, Secure Protocol Design, Cryptography, Real-Time Operating Systems (RTOS)
GCC, Clang, Make, GDB, Valgrind, Git, Linux
SPI, I2C, UART, GPIO, ARM Cortex-M, SoCs

PROJECTS & EXPERIENCE

EFPIX (Encrypted Flood Protocol for Information eXchange) [here]
A zero-trust, encrypted flood-based relay communication protocol designed for end-to-end encryption, plausible deniability, and untraceable messaging, even in hostile or degraded network environments.
Includes a full C implementation with modern encryption stack.
[Whitepaper, C, Protocol Design, LaTeX, Peer-to-peer networking, Cryptography, Embedded systems]

QMTIK (Quantized Model Training and Inference Kit) [here]
A minimal, lightweight and dependency-free implementation of a quantized neural network designed for embedded systems and resource constrained environments.
It can achieve 4x smaller model size, 16x faster inference, and minimal accuracy loss.
[C, Low-level programming, AI/ML, Embedded systems, Memory Optimization]

Heapless Zig RSA [here]
A single-file, zero-allocation library for RSA encryption and signatures in Zig with OAEP+ padding.
It provides fast encryption and decryption using Montgomery Multiplication and PEM key storage .
[Zig, Low-level programming, Cryptography]

More... *[here]*

ACHEIVEMENTS

AI/ML Trainee, *AIYA (Corporate Gurukul) [Sep 2021-May 2022]* Completed a competitive corporate course on AI/ML applications, achieving 2nd place in the final project competition.

Head of Game Development, *GIIS Tech Club (Singapore)* Led and judged game development submissions at a tech hackathon.

Volunteer Marketing and Technical Assistant, *4s NGO (Singapore)* Volunteered as Marketing and Technical Assistant and prepared marketing material and edited videos including animation and video production.

EDUCATION
AGH University of Science and Technology [Oct 2023-Expected 2027] Bachelor of Computer Science
GIIS Smart Campus (Punggol), Singapore [Oct 2021-Mar 2023] Awarded a full scholarship

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LANGUAGES
English: C1 (IELTS and ACERT)
Polish: A1 and avid learner
Hindi: Native
German: Intermediate