# ALJON A. NOVELO

✉ aanovelo@up.edu.ph
🌐 aanovelo.github.io

📍 Los Baños, Laguna
📞 +63 908 405 9629

## TECHNICAL SKILLS

**Languages & Frameworks:** C, Java, R, Assembly, Python, JavaScript (Node.js, Express.js, React.js), Flutter, C++

**Databases:** PostgreSQL, MongoDB, MariaDB, Firebase

**Tools & Platforms:** Github, Postman, Figma, GTKWave

## TECHNICAL PROJECTS

**Context-Free Grammar Simulator**
- Developed a command-line tool that performs step-by-step derivation of strings based on user-defined grammar productions.
- Enabled input parsing via file, assuming unambiguous grammars and valid strings.

**Color-Based Image Segmentation**
- Implemented a K-means clustering algorithm in C++ to segment images based on dominant color clusters.
- Processed sequential JPEG frames to isolate and highlight non-dominant color regions.

**Computer Architecture Simulation**
- Designed and simulated combinational and sequential circuits using VHDL, including test benches for validating logic behavior.
- Evaluated instruction performance and system efficiency through CPI analysis, speedup computations, and execution time comparisons.
- Conducted benchmark testing to analyze real-world CPU performance, using emulator tools and hardware specification assessments.

**Institute Room Reservation System**
- Implemented dynamic data tables, notifications, and booking workflows for real-time interaction.
- Integrated admin and user-specific features, such as class schedules, announcements, and reports.

**Networking Game**
- Implemented real-time player interactions using Java sockets for seamless communication.
- Utilized multithreading to optimize network performance and ensure responsive gameplay.

**LOLCODE Language Interpreter**
- Built a parser that constructs an abstract syntax tree to validate and process LOLCODE programs.
- Implemented execution logic for core LOLCODE constructs, including variable assignments, conditionals, loops, and arithmetic operations.

## EDUCATION

**University of the Philippines - Los Baños**
BS Computer Science | *2021 - Present*

**San Pablo City Science Integrated High School**
STEM Strand | *2015 - 2021*

## EXPERIENCE & INVOLVEMENT

**i-BRIDGE Systems Philippines Inc.**
**Intern**
| June - August 2025
- Developed unit and integration tests
- Developed the internal tool of the company
- Deployed a web application in the cloud

**Kapatirang Pitong Lawa sa UP Los Baños**
**Educational Committee Member**
| *August 2023 - June 2024*
- Assist in projects and activities concerning the educational sector of San Pablo City

**Socio-Cultural Committee Member**
| *August 2022 - August 2023*
- Assisted in organizing internal activities, aiming to strengthen camaraderie among the members

**Membership Committee Member**
| *March - August 2022*
- Assisted in overseeing the social welfare of the members and consolidating the organization

**UPLB Ugnayan ng Pahinungod**
**Volunteer**
| *March 2023 - Present*
- Facilitated community activities, volunteer training camps, and team-building activities

**UPLB Street Jazz Dance Company**
**Logistics Committee Member**
| *October 2022 - Present*
- Arranged transportation and logistics for events
- Managed procurement and maintenance of properties

**UPLB College Of Arts and Sciences Freshman Council**
**External Affairs Committee Co-Head**
| *November 2021 - October 2022*
- Led external engagement and event organization, demonstrating management and external communication skills