



# ALJON A. NOVELO

✉ [aanovelo@up.edu.ph](mailto:aanovelo@up.edu.ph)  
🌐 [aanovelo.github.io](https://github.com/aanovelo)

📍 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 | March 2025

- 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 | December 2024

- 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 | September 2024

- 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 | June 2024

- 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 | May 2024

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

### LOLCODE Language Interpreter | January 2024

- 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

## LEADERSHIP & INVOLVEMENT

### Kapatirang Pitong Lawa sa UP Los Baños

#### Socio-Cultural Committee Member

| August 2024 - Present

- Led organization's participation in UPLB February Fair 2025

#### Educational Committee Member

| August 2023 - June 2024

- Assist in projects and activities concerning the educational sector of San Pablo City

#### Socio-cultural Committee Office-in-Charge

| February - August 2023

- Initiated inter-organizational engagements and external operations

#### Socio-Cultural Committee Member

| August 2022 - February 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