

# Fernando Lopez

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## Education

### University of Illinois Chicago (UIC)

Bachelor of Science in Computer Science

Aug 2023 - Dec 2026

Relevant Coursework Data Structures, Programming Practicum, Mathematical Foundations of Computing, Machine Organization, Languages and Automata, Programming Language Design and Implementation

## Technical Skills

**Programming Languages:** Python, C++, JavaScript, Golang, Java, C, C#, SQL, Intel x86 Assembly, RISC-V

**Frameworks & Tools:** React, Vercel, Django, Flutter, Dart, ROS, Git, Linux, Vim, VS Code, Firebase, Sanity API, Brevo, EmailJS, Maven, Pytest, Junit5, SQLite, Figma

## Projects

### Notes App Mobile Project (Passion Project) (C++, Dart)

Jun 2025 - Present

- Architected cross-platform Minimum Viable Product (MVP) notes application (Flutter/Dart)
- Programmed C++ conversion logic for seamless integration with Firebase, managing data flow for up to 20,000 edits daily
- Secured user authentication and data persistence via Firebase, supporting seamless synchronization for 20,000 daily edits
- Developed a scalable Object-Oriented architecture for the application, designed to manage an initial data volume of 1 gigabyte of notes

### Dulce Tentaciones Bakery Website (Passion Project) (JavaScript, HTML, CSS)

Jun 2025 - Aug 2025

- Constructed a responsive React frontend, delivering 5 core pages for a startup bakery
- Integrated Brevo and EmailJS for email marketing, newsletters, and seamless form submissions supporting 1000 submissions per month
- Integrated Sanity API to manage dynamic, client-side content for streamlined updates

### UIC Registration Page (Passion Project) (24-Hour-Hackathon) (JavaScript, HTML, CSS)

Mar 2025 - Mar 2025

- Created a responsive, user-friendly registration page
- Enhanced UI/UX design by implementing accessibility features and an intuitive layout
- Collaborated with a team of three to design and develop a responsive registration page in a 24-hour hackathon, competing against 15 teams

### Digital Art Watermark Page (Coursework Project)

- Engineered a secure, full-stack permission system (React/Django) utilizing advanced structures for verified image scraping
- Implemented Merkle Tree, Trie, and Bloom Filter to provide verifiable, tamper-proof proof of permission and accelerate image hash lookups by reducing average search time to O(log n) runtime
- Designed the schema and API to efficiently store metadata (permission, author details) with SQLite

## Relevant Experience

### Engineering Design Team, Control Systems Team Member

### NASA Lunabotics 2026 Challenge, UIC Team (ROS, LiDaR)

Sep 2025 - Present

- Designed a lunar robot prototype to support off-world resource utilization for the Artemis Mission
- Defined mission statements and established 15+ key system requirements by applying NASA systems engineering principles
- Researched and evaluated robot designs, focusing on dust tolerance, energy efficiency, and autonomous capabilities
- Engineered software architecture and control logic, designing a robust data transmission system restricted to 4 kbps using H.265 encoding
- Investigated and simulated LiDaR technology using ROS (Robot Operating System), developing a pathfinding algorithm for autonomous visual mapping of lunar terrain

## Leadership & Activities

### Women in Computer Science

### Aspire To Inspire Mentor

Sep 2025 - Present

- Led and guided two students through the development of personal web portfolios, advising on design, architecture, and deployment best practices
- Coordinated a collaborative team of four (two mentors, two mentees) to architect a real-time chatting application using Django and React
- Defined the initial scope and strategy for implementing AWS deployment and future cross-platform expansion to mobile
- Communicated technical insights and networking strategies, fostering a supportive environment

## Work Experience

### Monterrey Security

### Event Security

Jun 2025 - Present

- Resolved incidents and coordinated with security teams to maintain a secure environment for 63,500 patrons

### Lawn Bowling Inc.

### Bowling Attendant

Aug 2023 - Jan 2025

- Diagnosed and repaired complex technical issues with POS and Lane Machine systems, reducing customer downtime by 25%