

Gustavo Coutiño Ocampo

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EDUCATION

Tecnológico de Monterrey (ITESM)

Graduation Date: **June 2026**

B.S. Computer Science and Technology (BCS)

GPA: **94.69/100**

Relevant Coursework: Programming of Data Structures and Fundamental Algorithms, Object-Oriented Programming, Implementation of the Internet of Things, Software Construction and Decision Making, Device Interconnection, Implementation of Computational Methods

EXPERIENCE AND PROJECTS

Museo Papalote del Niño

September 2024 - December 2024

- Developed an iOS application for Museo Papalote del Niño to enhance visitor experience and compensate for limited tour guide availability.
- Designed and implemented the UI/UX using SwiftUI, creating an intuitive interface to improve engagement with museum exhibitions.
- Implemented proper code architecture practices by organizing functionality into modular components for improved maintainability and efficient compilation.
- Established database connectivity using UserDefaults for local storage and implemented RESTful API integration (GET, POST, PUT) to communicate with the backend.
- Collaborated in a team of 5 engineers, working directly with another iOS developer while coordinating with 3 web/backend developers.

Optifood

November 2024

- Developed a web application with Next.js and Flask, leveraging the Gemini API and Spoonacular API to improve the experience of international students in food management and recipe preparation
- Implemented components and functionalities in Next.js to create a dynamic and responsive user interface
- Integrated third-party services (Spoonacular and Gemini) to enhance the application's features
- Tested and validated the Flask API to ensure efficient communication between frontend and backend

Harvest Simulation

August 2024 - September 2024

- Developed a **Flask API** to simulate the movement of harvesters and a collector in a grid environment, utilizing A* pathfinding and agent-based modeling with **Python** and **Agentpy**, generating a 3D simulation in **Unity** based on the response from the server
- Implemented RESTful API endpoints to provide real-time simulation data, supporting **Unity** integration for visualization.
- Focused on key simulation elements, including efficient pathfinding, resource management, and agent interactions in a dynamic environment.
- Used **Agentpy** to manage multiple agents and create their interactions within the simulation.
- Worked with **Docker** to create a virtual machine for generating the textures required for the simulation.

Sorteos Tec

February 2024 - April 2024

- Developed a comprehensive web application for Sorteos Tec to integrate monetization features into the raffle ticket purchase platform, leveraging **React**, **Node.js**, **Express**, **Aiven**, and **MySQL**.
- Enhanced user engagement and increased average session duration through the creation of a dynamic and responsive UI, optimizing for both desktop and mobile users.
- Designed and implemented secure **RESTful API** endpoints in **Node.js**, utilizing **HTTPS** to encrypt data in transit and **JWT** (JSON Web Tokens) for robust authentication and authorization.
- Engineered the **MySQL** database schema, optimizing queries, ensuring data integrity, and supporting transactional operations.
- Participated in regular stand-ups, sprint planning, and retrospectives to continuously improve the development process.

EXTRACURRICULAR

- **International Collegiate Programming Contest:** Qualified for the Mexico ICPC Finals 2024 after obtaining place 63 out of 486 teams
- **Uber Career Prep:** Selected for a competitive fellowship with a 4% acceptance rate, focused on honing technical, communication, and negotiation skills. Participated in bi-weekly meetings and SWE mock interviews with Uber engineers, receiving feedback and solving algorithmic problems to prepare for technical interviews.
- **Programming and Algorithms Club:** Practiced **data structures and algorithmic problems** three days a week with ex-ICPC winners to prepare for **ICPC**.

PROGRAMMING LANGUAGES: PHP, JavaScript, Python, C++

OTHER TECHNOLOGIES: Node.js, Next.js, React, Express, MySQL, PostgreSQL, Sequelize, Git, GitHub, Visual Studio Code, Airtable, Jira, Docker

SOFT SKILLS: Open-minded, emotionally intelligent, patient, collaborative, problem solver